ORDER NO. MD9804084A1
A6

Service Manual

Simplified

COMPACT disc DIGITAL AUDIO TEXT

MASH* multi-stage noise shaping

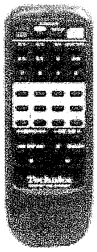
* MASH is a trademark of NTT.

Compact Disc Changer

SL-MC3

Colour

(K) . . . . . .Black Type



Area

Suffix for Model No.	Area	Colour
(P)	U.S.A.	(K)
(PC)	Canada	

TRAVERSE DECK : RAE0152Z-M Mechanism Series

Please file and use this Service Manual together with the Service Manual for Model No. SL-MC410 (P, PC) Order No. MD9706050C1

Note : This Simplified Service Manual is provided to indicate the main difference between the orginal Model No. SL-MC410 (P, PC) and the subsequent Model No. SL-MC3 (P, PC).

■ Specifications

■ AUDIO

No. of channels	2 (left and right, stereo)
Frequency response	2 - 20,000 Hz, ± 1 dB
Output voltage	2 V (at 0 dB)
Dynamic range	92 dB
S/N	100 dB
Harmonic distortion	0.007% (1kHz, 0 dB)
Wow and flutter	Below measurable limit
DA converter	MASH (1 bit)
Output impedance	Approx. 1 kΩ
Load impedance	More than 10 kΩ

■ PICKUP

Wavelength	780 nm

■ General

Power supply	AC 120V, 60 Hz
Power consumption	11 W
Dimensions (W x H x D)	430 x 171 x 392 mm ($16^{15}/_{16}$" x $6^{11}/_{16}$" x $15^{7}/_{16}$")
Weight	6.4 kg (14.1 lb.)

Notes :
Specifications are subject to changes without notice.
Weight and dimensions are approximate.

⚠ WARNING

This service information is designed for experienced repair technicians only and is not designed for use by the general public. It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product. Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

Technics®

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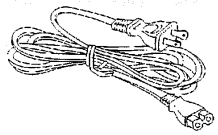
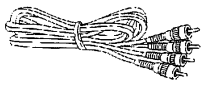
Contents

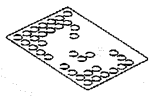
■ Accessories



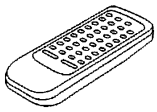
AC power supply cord (SJA172) ..... 1pc.



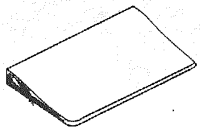
Stereo connection cable (RJL2P004B08) ..... 1pc.



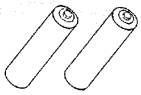
Numbered stickers (RQLA0321) ..... 1pc.



Remote control transmitter (EUR645270) ..... 1pc.



Notebook-like binder (RFA0622-K1) ..... 1pc.



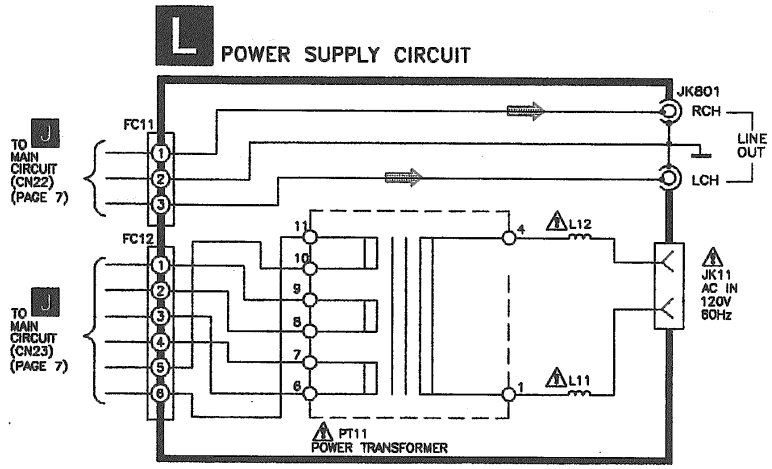
Batteries ..... 1pc.

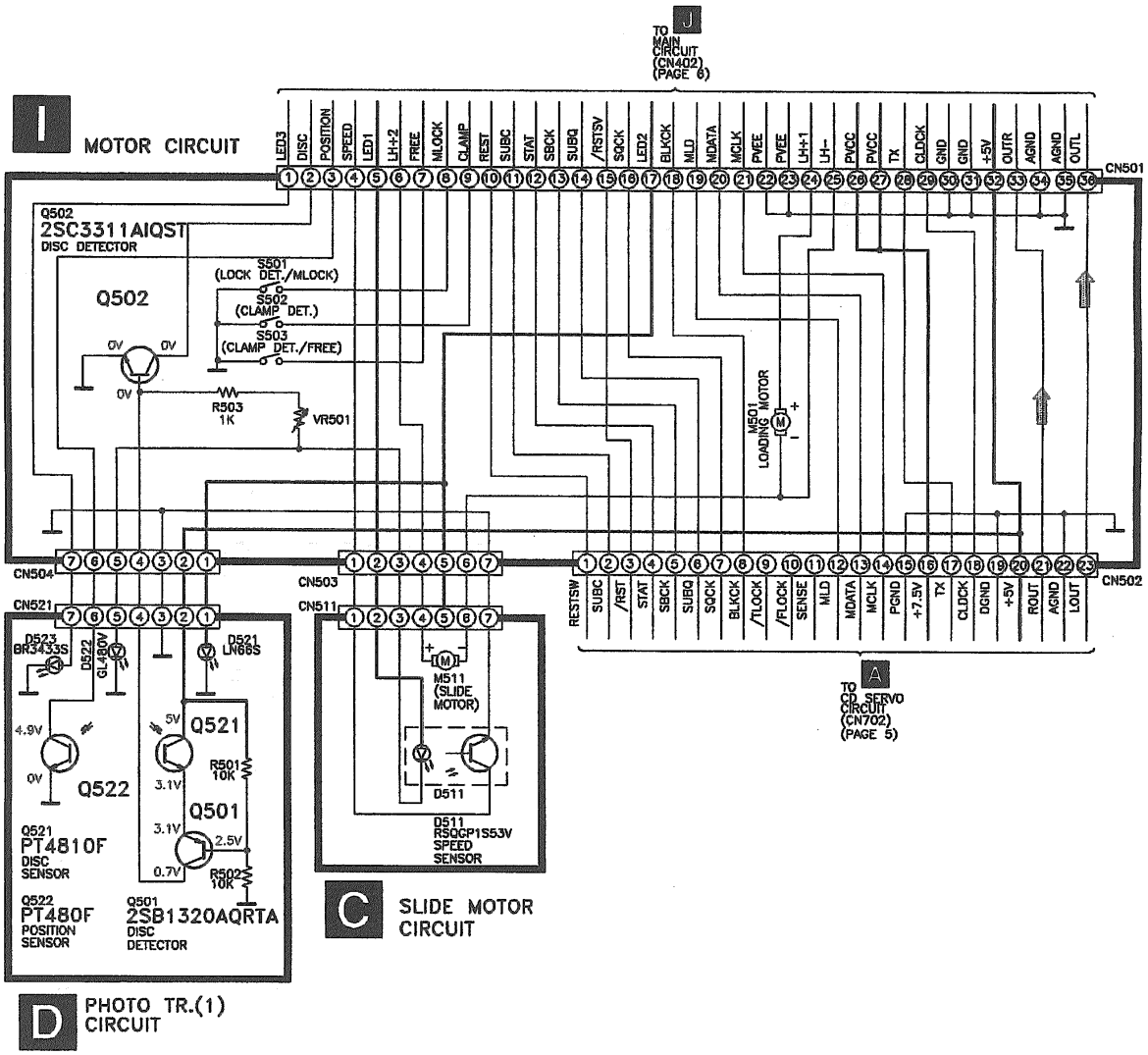
● PRECAUTIONS for BLUE LED

Attention Service Centres : Below are some precautions that should be taken when handling the BLUE LED.

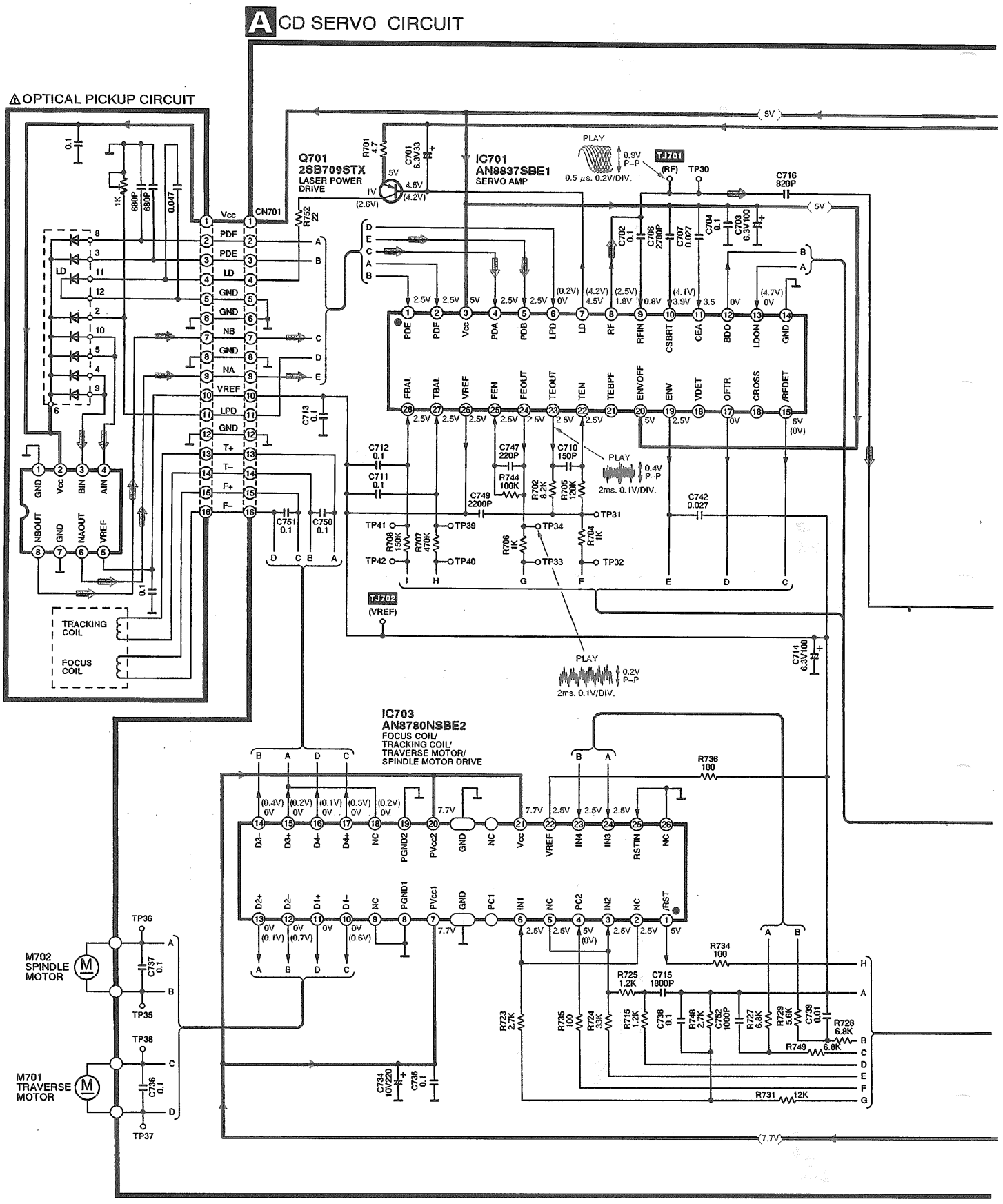
1. Repair stations must not have any plastic materials or containers near the set under repair / service.
2. Earth Band must be worn at all times during repair / service.
3. At all times , do not touch LED leads or conductive paths connected to the LED.
4. When possible service / repair station should have Ion blow installed and directed at the PCB with the LED.
5. All other standard anti static precautions must be taken.

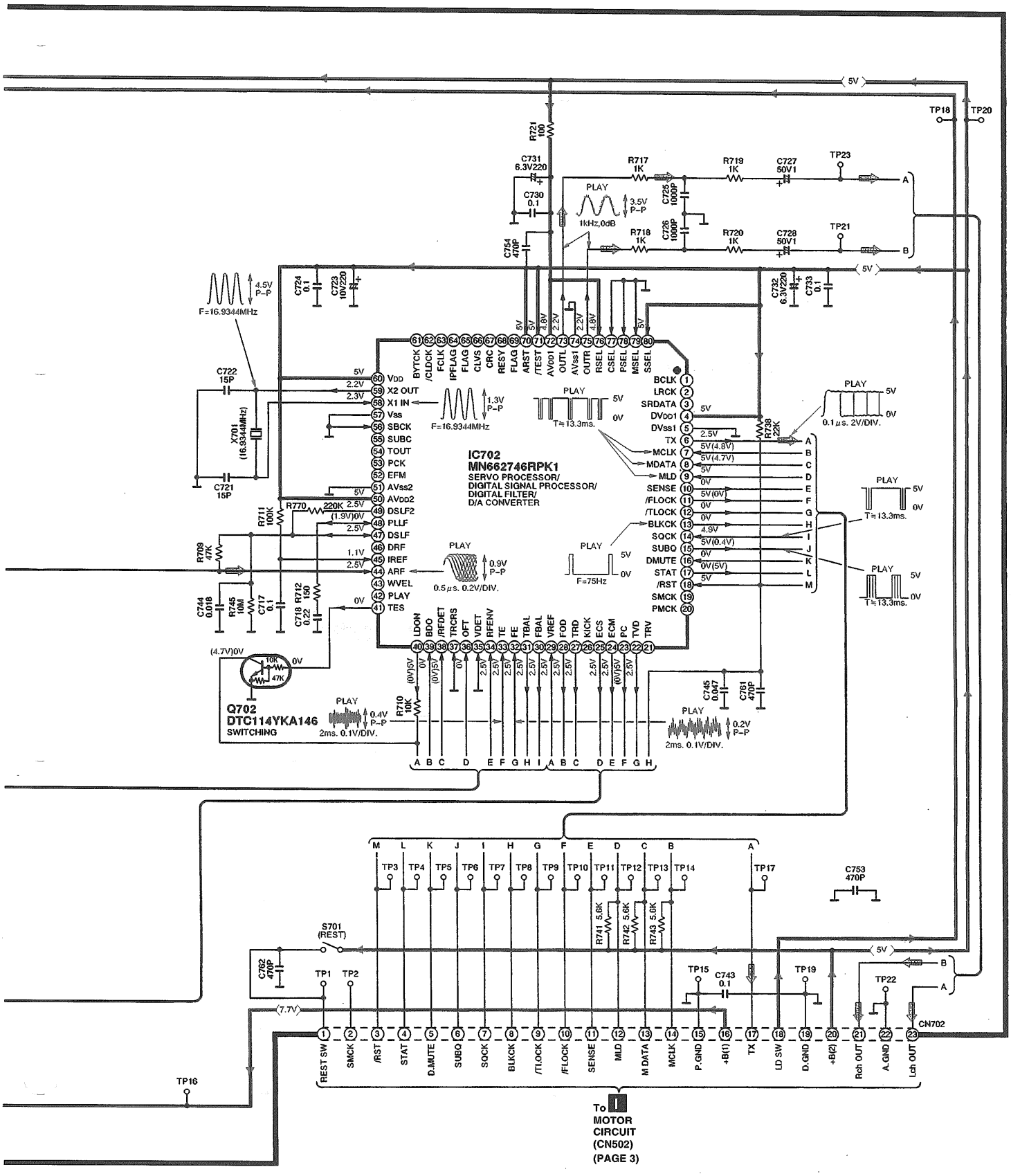
Schematic Diagram



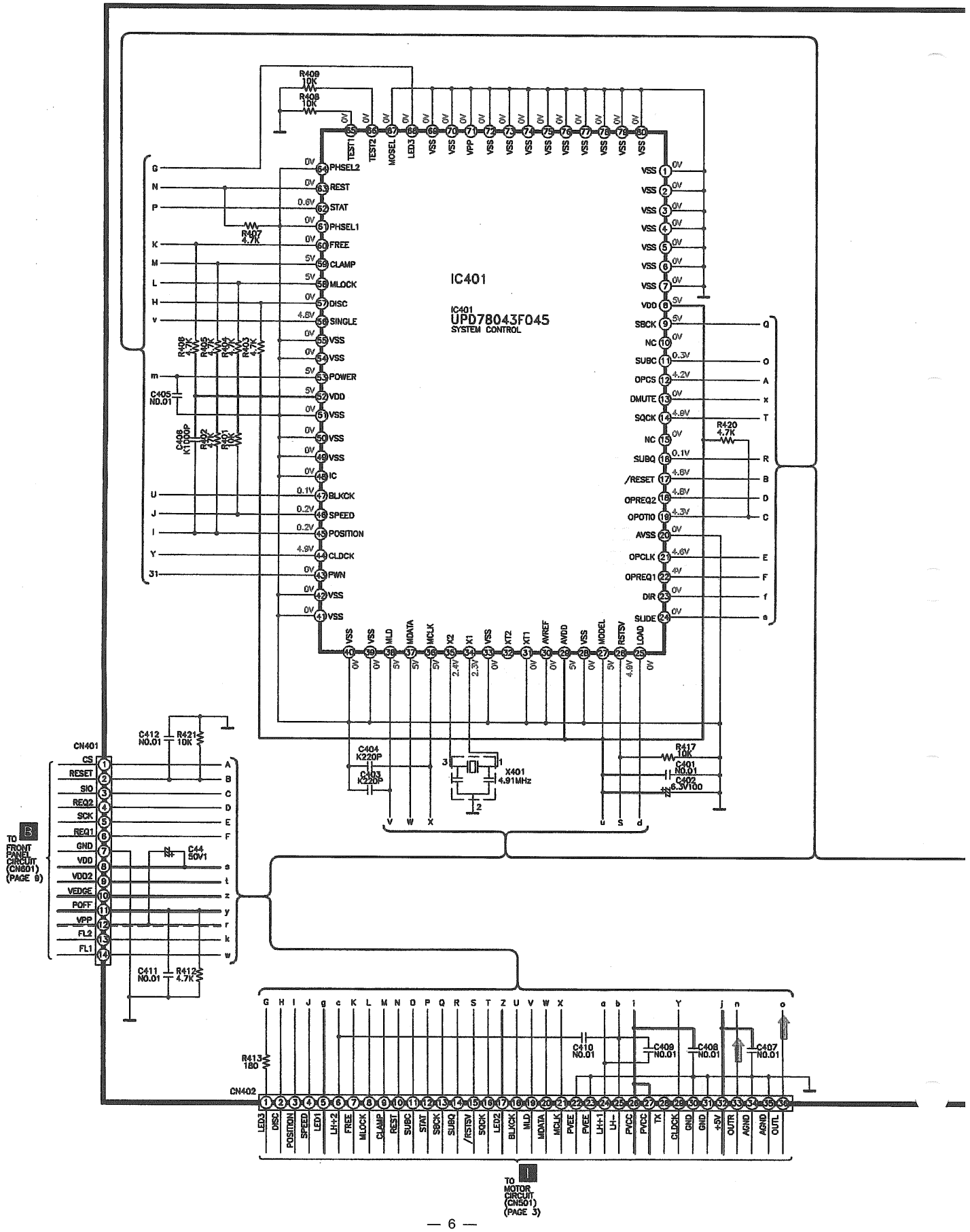


A CD SERVO CIRCUIT

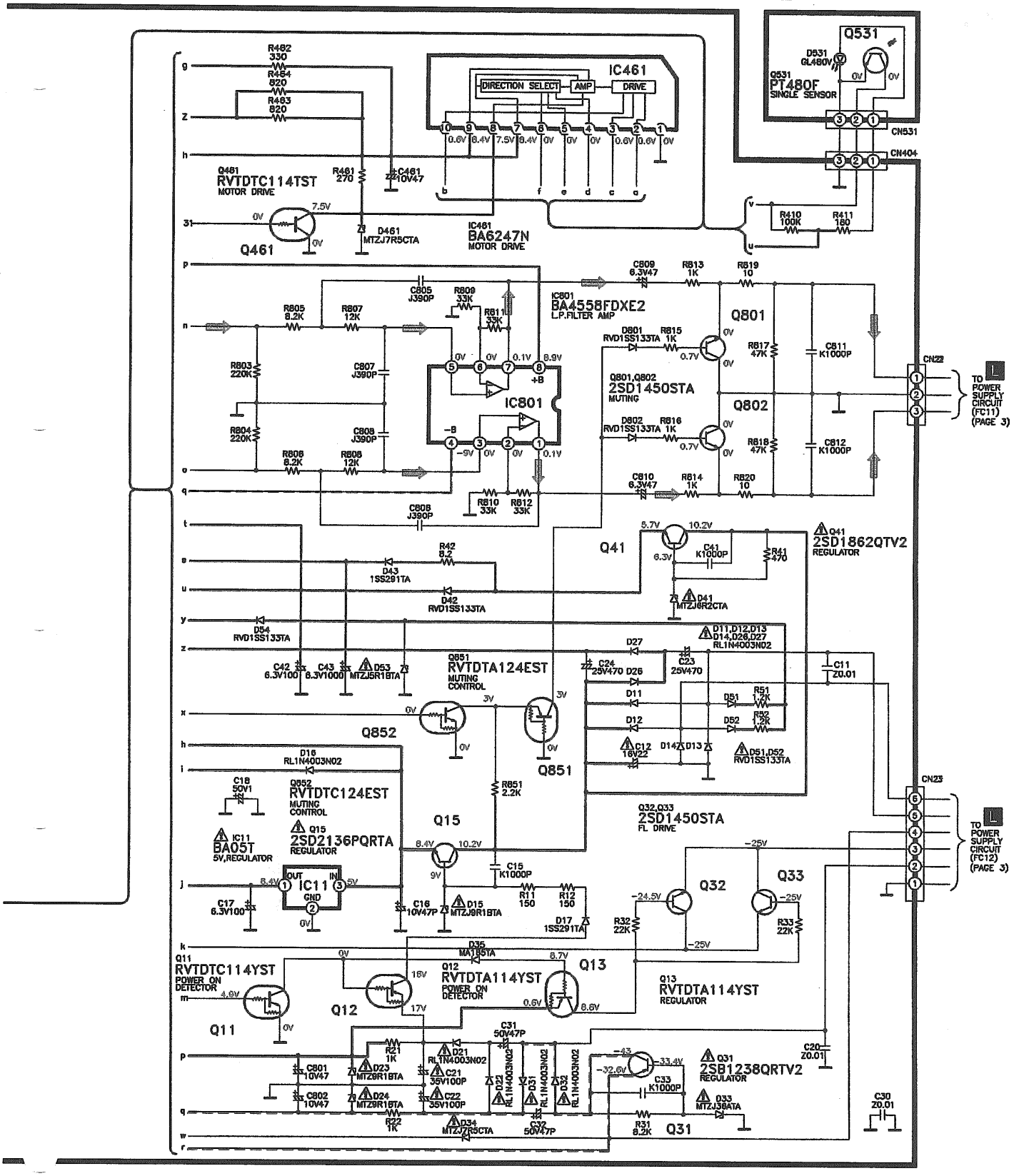



IC702
MN662746RPK1
SERVO PROCESSOR/
DIGITAL SIGNAL PROCESSOR/
DIGITAL FILTER/
D/A CONVERTER
Q702
DTC114YKA146
SWITCHING
To I
MOTOR
CIRCUIT
(CN502)
(PAGE 3)
CN702

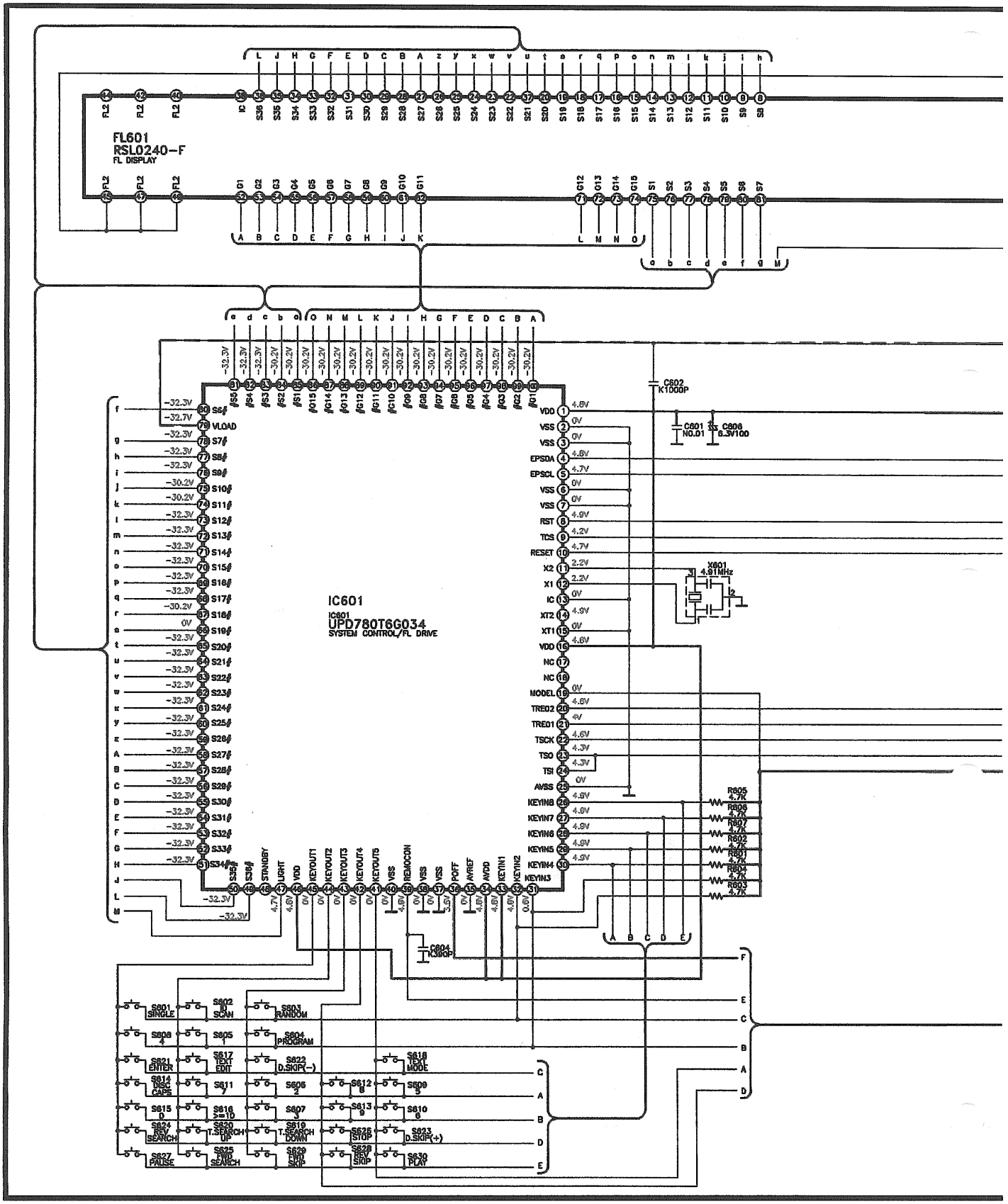
J MAIN CIRCUIT

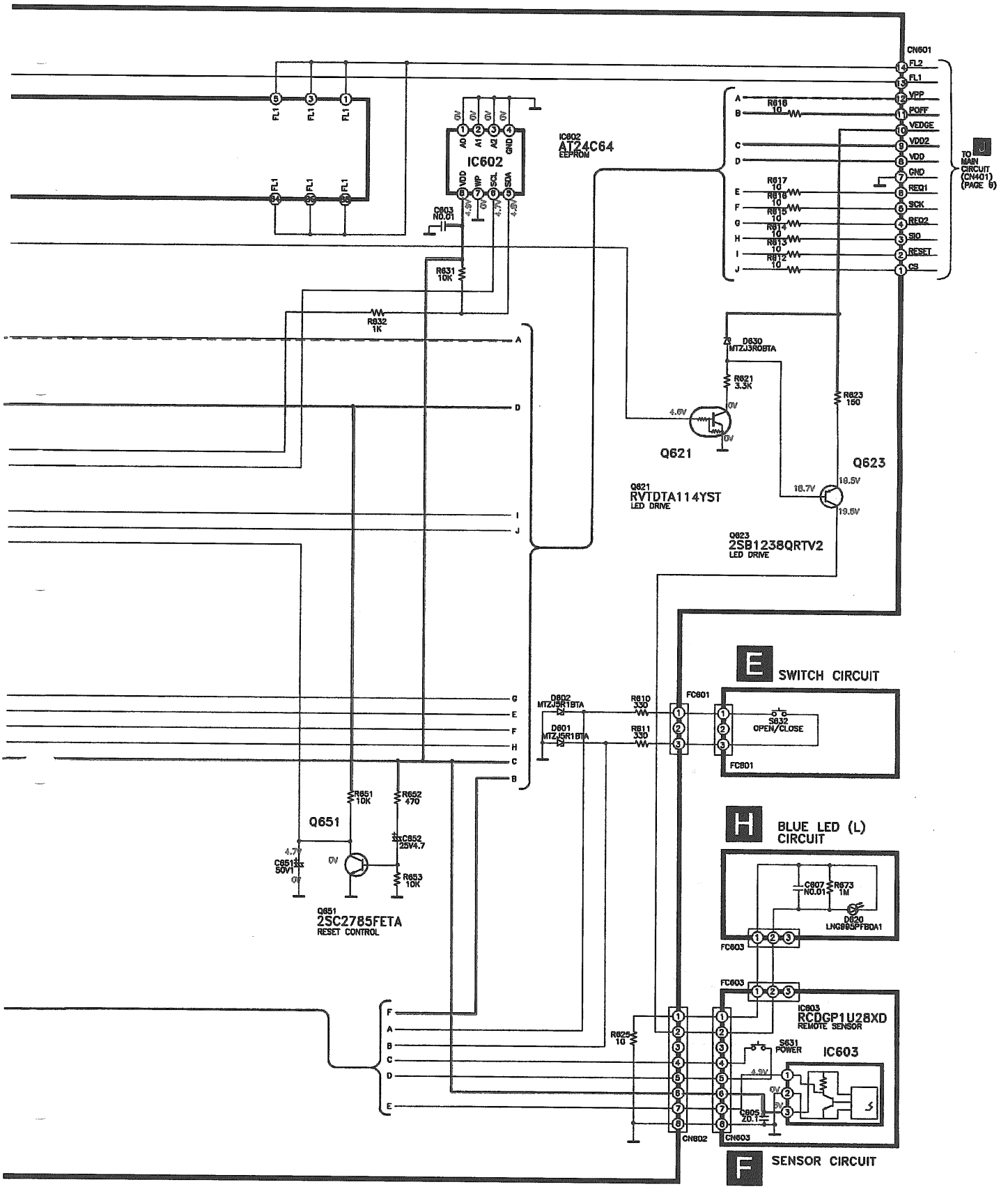


K PHOTO TR.(2) CIRCUIT



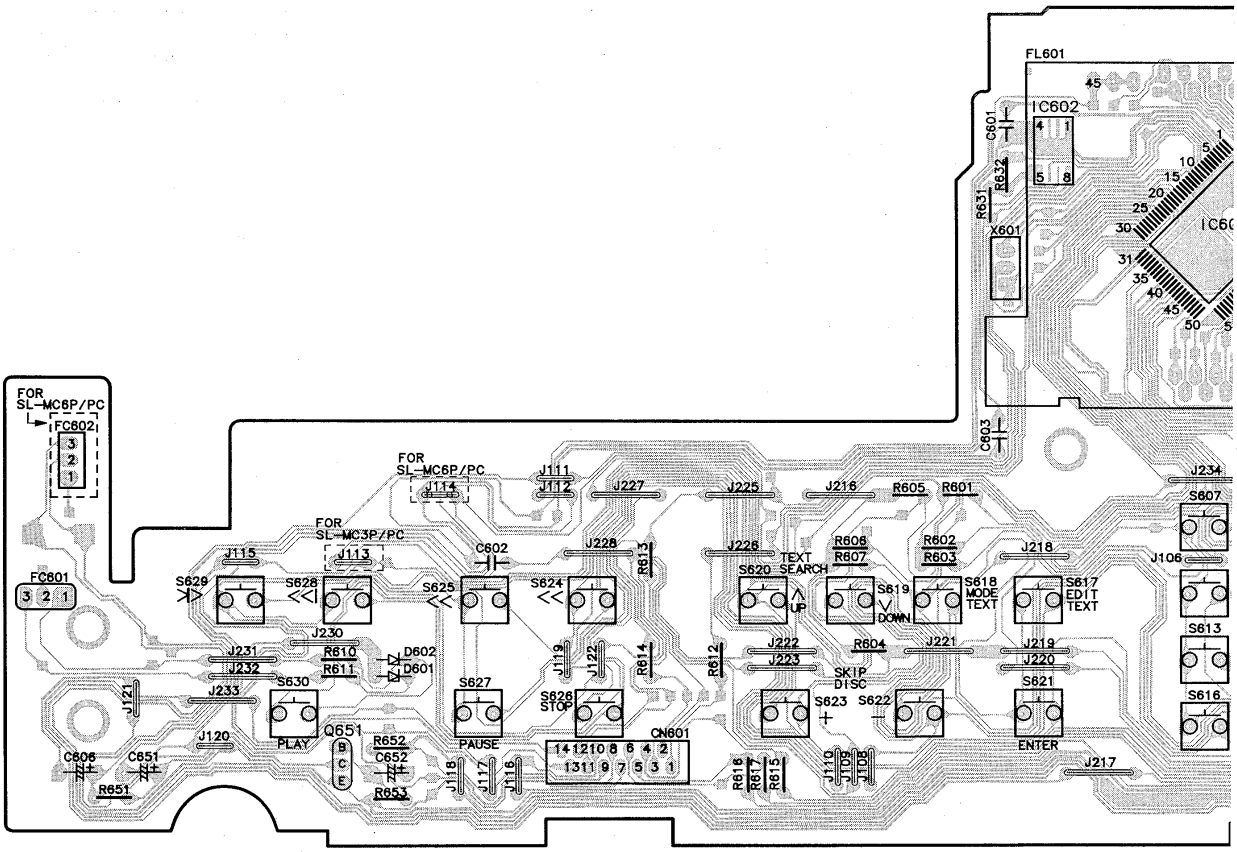
B FRONT PANEL CIRCUIT



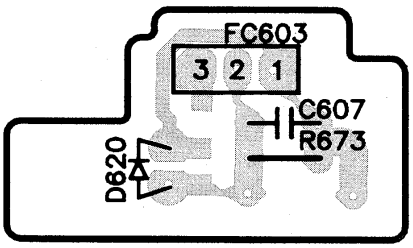

CN601
FL2
FL1
VPP
POFF
VEDGE
VDD2
VDD
GND
REQ1
SCK
REQ2
SIO
RESET
CS
TO MAIN CIRCUIT (CN401) (PAGE 6)
IC602
AT24C64
EEPROM
R631 10K
R632 1K
R621 3.3K
R623 150
D630 MTZJ3R0BTA
Q621
Q623
Q621 RVTDTA114YST LED DRIVE
Q623 2SB1238QRTV2 LED DRIVE
E SWITCH CIRCUIT
D802 MTZJ5R1BTA
D601 MTZJ5R1BTA
R610 330
R611 330
FC601
S632 OPEN/CLOSE
FC801
H BLUE LED (L) CIRCUIT
C807 NC.01
R673 1M
D620 LNG805PFB0A1
FC603
IC603 RCDGP1U28XD REMOTE SENSOR
S631 POWER
IC603
R825 10
C805 Z0.1
CN602
CN603
F SENSOR CIRCUIT
Q651
R651 10K
R652 470
C852 25V4.7
C851 50V1
R653 10K
Q651 2SC2785FETA RESET CONTROL

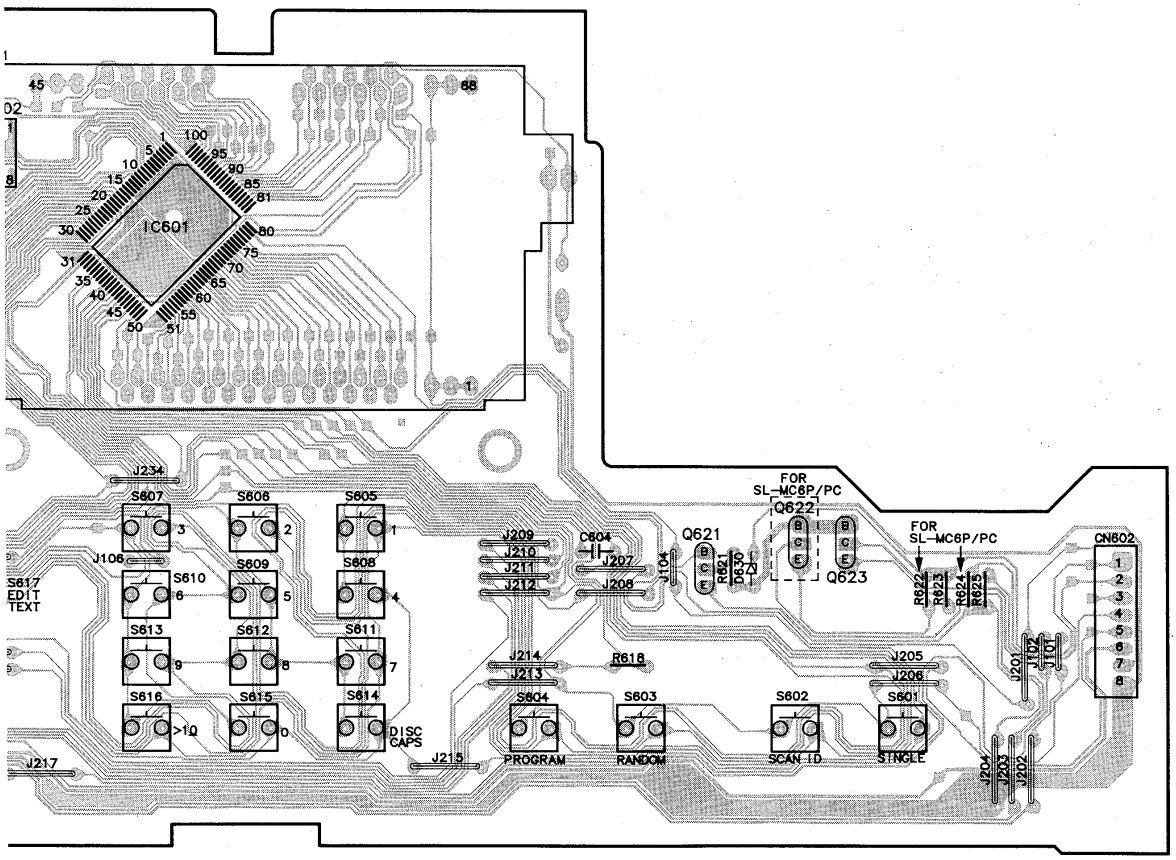
■ Printed Circuit Board

B FRONT PANEL P.C.B. (REP2680C-S)

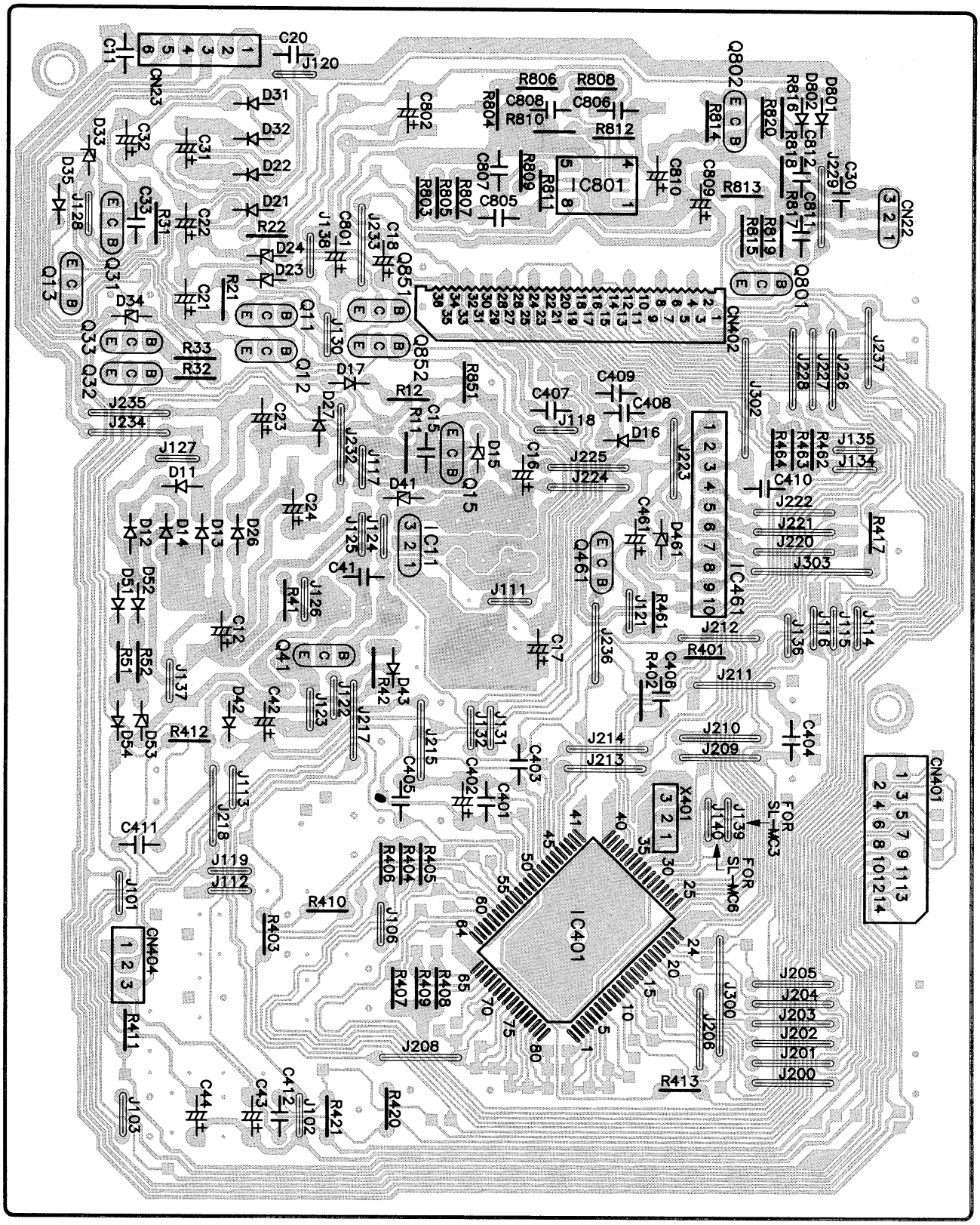


H BLUE LED (Left) P.C.B. (REP2680C-S)

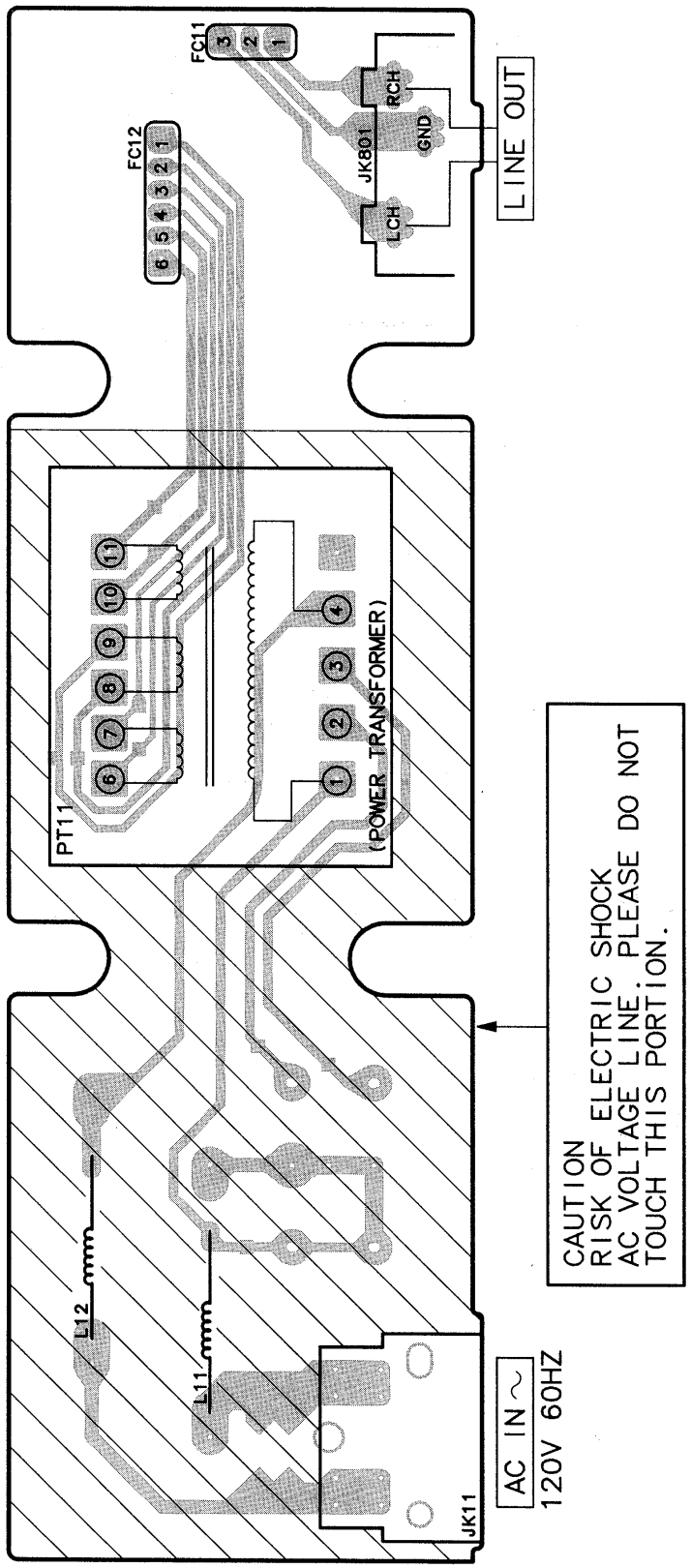



IC601
J234
S607
S606
S605
J106
S610
S609
S608
S617
EDIT
TEXT
S613
S612
S611
S616
S615
S614
DISC
CAPS
J217
J215
J209
J210
J211
J212
C604
J207
J208
J104
Q621
R621
D630
FOR
SL-MC6P/PC
Q622
Q623
R622
R623
R624
R625
CN602
J214
J213
R618
S604
S603
S602
S601
J205
J206
PROGRAM
RANDOM
SCAN ID
SINGLE
J201
J102
J101
J204
J203
J202

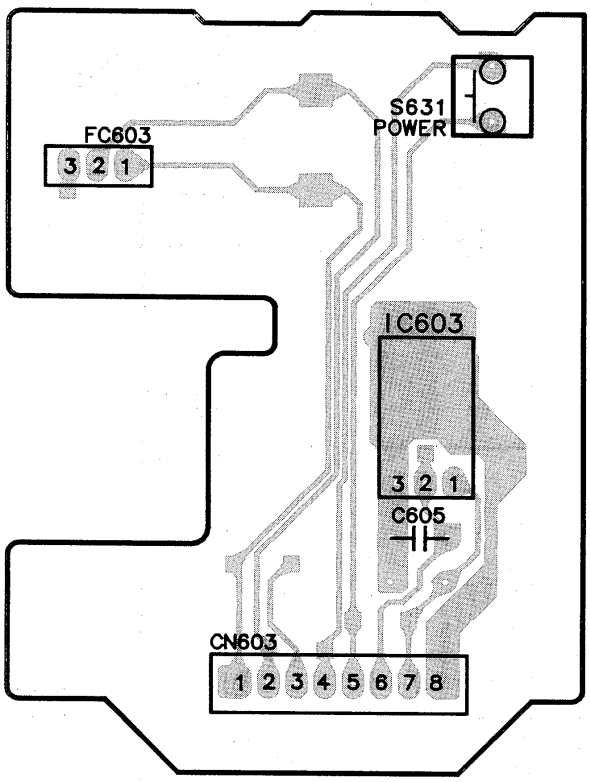
J MAIN P.C.B. (REP2491C-M)



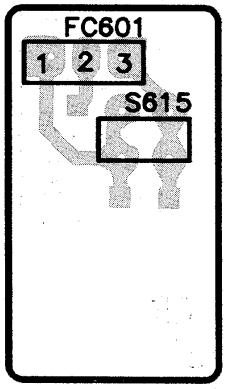
L POWER SUPPLY P.C.B. (REP2218E-P)



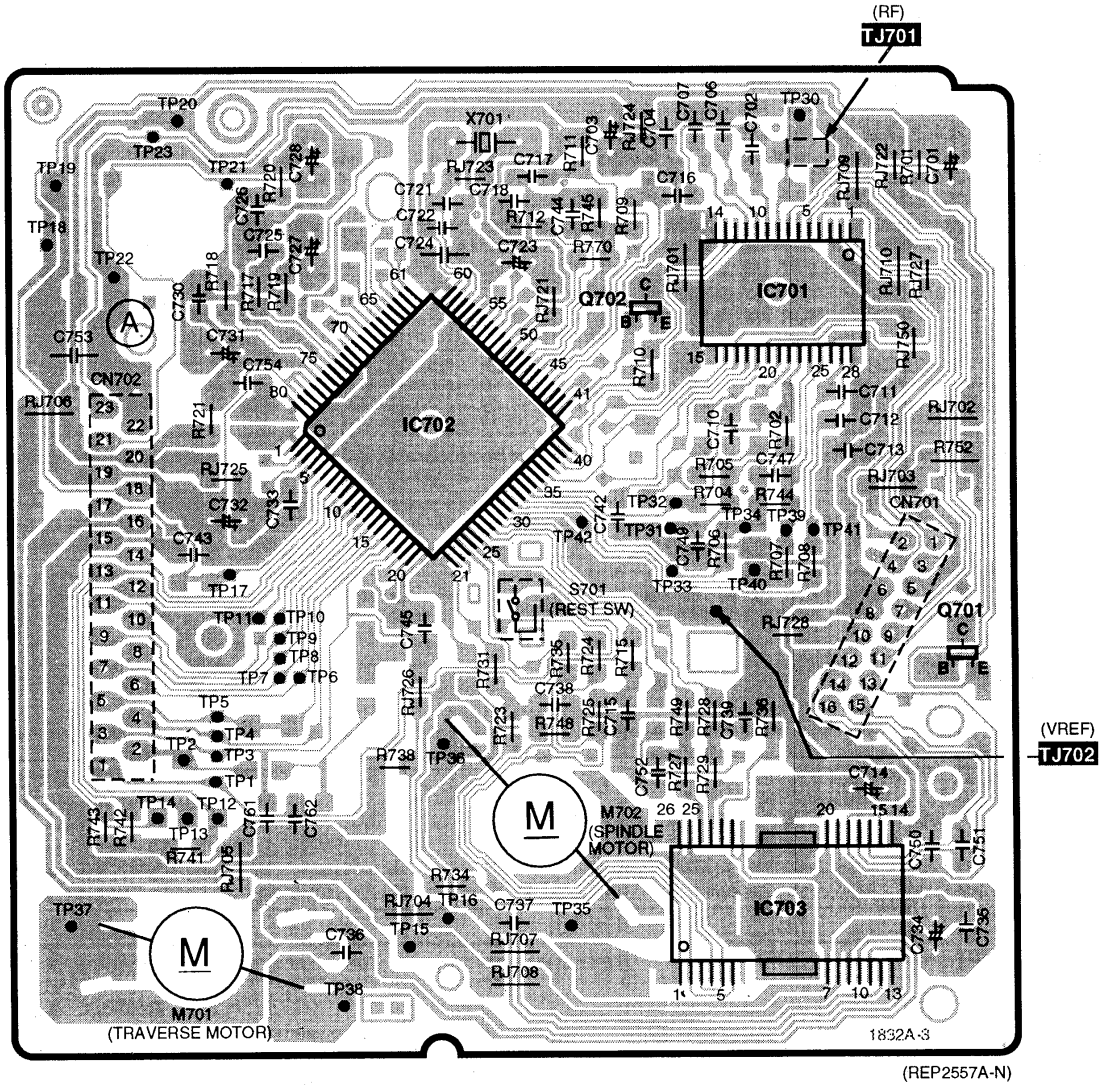
F SENSOR P.C.B. (REP2680C-S)



E SWITCH P.C.B. (REP2680C-S)



A CD SERVO P.C.B. (REPX0144A)



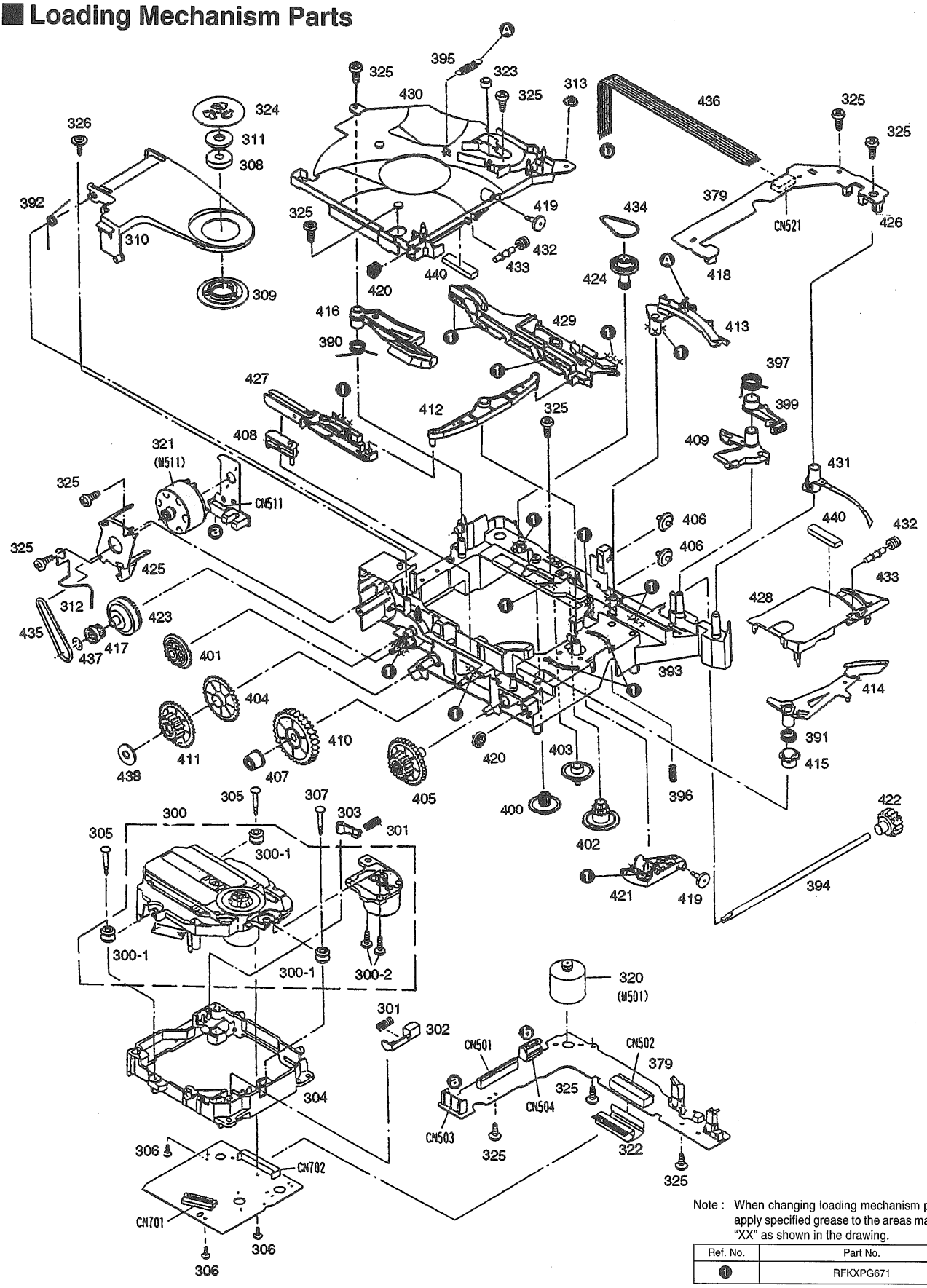
(REP2557A-N)

■ Loading Mechanism Parts List

Notes : [M] in Remarks column indicates parts supplied by **MESA**.

Ref No.	Part No.	Part Name & Description	Remarks
		TRAVERSE DECK	
300	RAE0152Z-M	TRAVERSE	[M]
300-1	SHGD113-1	FLOATING CUSHION	[M]
300-2	SNSD38	TRV MOTOR ASS'Y SCREW	[M]
301	RMB0455	FRONT/BACK ARM SPRING	[M]
302	RML0423	FRONT ARM	[M]
303	RML0424	BACK ARM	[M]
304	RMR0937-K	TRV CHASSIS	[M]
305	RMS0123-1	FIXED PIN B	[M]
306	XTN2+6G	PCB SCREW	[M]
307	RMS0350	FIXED PIN A	[M]
308	RMQ0653	MAGNET	[M]
309	RMR0624-W	CLAMPER	[M]
310	RMR0926-K1	CLAMP PLATE	[M]
311	RMA1003	BACK YOKE	[M]
312	RME0225	SPRING	[M]
313	RHW52002	WASHER	[M]
320	RFKPLMC50PAK	LOADING MOTOR ASS'Y	[M]
321	RFKNLMC50PBK	SLIDE MOTOR ASS'Y	[M]
322	REZ0916	23P FFC	[M]
323	RMG0200	RUBBER CUSHION	[M]
324	RMR0334	FIXED PLATE	[M]
325	XTBS26+10J	SCREW	[M]
326	XTWS3+10Q	SCREW	[M]
327	RDG0333	FRONT LOCK GEAR	[M]
328	RDG0334	BACK LOCK GEAR	[M]
329	RDG0374	BOTTOM LOCK GEAR	[M]
330	RMA0904	SIDE PLATE L	[M]
331	RMA0905	SIDE PLATE	[M]
332	RMA0906	TOP RAIL	[M]
333	RMA0907	BOTTOM RAIL	[M]
334	RMA0908	BACK SUPPORT PLATE	[M]
335	RMB0469	LOCK ARM SPRING	[M]
336	RML0421	STAY LOCK ARM	[M]
337	RML0436	FRONT LOCK PLATE	[M]
338	RML0437	REAR LOCK PLATE	[M]
339	RMR0959-K	ROPE GUIDE	[M]
340	RMW0009	GUIDE ROPE	[M]
341	RDG0183-L	DAMPER GEAR	[M]
342	RMN0388	SENSOR HOLDER	[M]
343	RFKNLMC50PCK	DISC STOCKER A ASS'Y	[M]
344	RFKNLMC50PDK	DISC STOCKER B ASS'Y	[M]
347	RML0419	SHUTTER LEVER LEFT	[M]
350	RMR0932-K	SHUTTER SUPPORT (R)	[M]
352	RMR0948-H	STOCKER SEPARATOR PL	[M]
353	XTB3+6F	SCREW	[M]
354	RFKNLMC50PEK	E. PUSH UP LEVER ASS	[M]
355	RMC0291	E. CLICK SPRING	[M]
356	RME0203	E. SLIDE SPRING G	[M]
357	RME0204	E LEVER SPRING	[M]
358	RML0438	E RELAY LEVER	[M]
359	RML0439	E SLIDE PLATE	[M]
360	RMR0938-K	EJECT BASE	[M]
361	RMR0939-K	E COVER	[M]
362	RMR0940-K	E LEVER	[M]
363	RMR0941-H	E BUTTON	[M]
364	RMR0943-H	E SUPPORT LEVER	[M]
365	RMR0958-K	E GUIDE	[M]
366	RMR0964-K	E SUPPORT A	[M]
367	RMR0965-K	E SUPPORT B	[M]
368	SFYB-5-32	E CLICK BALL	[M]
369	XTN2+6JFZ	EJECTOR BK SCREW	[M]
370	RMB0454	GUARD ROPE SPRING	[M]
377	RMC0316	BALANCE SPRING	[M]
378	XTB3+7F	SCREW	[M]
379	RFKBMC410PK	P.C.B ASS'Y	[M]
381	RMA0985	SHUTTER SUPPORT LEVER	[M]
382	RMA0910	FRONT STOCKER STAND	[M]
383	RMA0911	BACK STOCKER STAND	[M]
384	RMR0930-K	SHUTTER INSIDE	[M]
385	RMR0931-K	SHUTTER OUTSIDE	[M]
386	RMR0933-K	SHUTTER SUPPORT (L)	[M]
390	RME0195	8 CD SPRING	[M]
391	RME0196	REVERSE LEVER SPRING	[M]
392	RME0197	CLAMP SPRING	[M]
393	RFKPLMC50PBK	MECHANISM BASE ASS'Y	[M]
394	RMS0519	JOINT SHAFT	[M]
395	RMB0453	FORWARD LEVER SPRING	[M]
396	RMB0483-1	RELEASE LOCK SPRING	[M]
397	RME0194	SUB LEVER SPRING	[M]
399	RML0413	FEED SUPPORT LEVER	[M]
400	RDG0337	SPEED DOWN GEAR A	[M]
401	RDG0342	SHIFT SPEED DOWN GEAR	[M]
402	RDG0339	DRIVE GEAR	[M]
403	RDG0338	SPEED DOWN GEAR B	[M]
404	RDG0344	MIDDLE SHIFT GEAR	[M]
405	RDG0346	FORWARD SHIFT GEAR	[M]
406	RDP0081	BOTTOM SHIFT GEAR	[M]
407	RDP0080	TOP SHIFT GEAR	[M]
408	RMR0923	SLIDE SUPORT PLATE	[M]
409	RML0414	GUIDE LEVER	[M]
410	RDG0345	MIDDLE SHIFT GEAR B	[M]
411	RDG0343	REAR SHIFT GEAR	[M]
412	RML0411	JOINT LEVER	[M]
413	RML0415	REVERSE FOOD LEVER	[M]
414	RML0417	RETURN LEVER A	[M]
415	RML0418	RETURN LEVER B	[M]
416	RML0416	8 CD LEVER	[M]
417	RDP0340	SHIFT PULLEY GEAR	[M]
418	RMN0358	LED HOLDER	[M]
419	RDP0082	ROPE ROLLER A	[M]
420	RDP0083	ROPE ROLLER B	[M]
421	RMR0927	ROLLER BASE	[M]
422	RDG0347	BOTTOM SHIFT ROLLER	[M]
423	RDG0341	COUNT RING	[M]
424	RDG0336	PULLEY GEAR	[M]
425	RMN0356	MOTOR HOLDER	[M]
426	RMN0399	SENSOR HOLDER	[M]
427	RMR0922	TOP SLIDE PLATE	[M]
428	RML0924	DISC GUIDE L	[M]
429	RMR0921	BOTTOM SLIDE PLATE	[M]
430	RML0925	DISC GUIDE R	[M]
431	RML0412	FORWARD LEVER	[M]
432	RDP0091-2	DISC ROLLER	[M]
433	RDP0092-1	ROLLER GUIDE	[M]
434	RDV0041	BELT (LOADING)	[M]
435	RDV0046	BELT (SHIFT)	[M]
436	REZ0832	7P FLAT CABLE	[M]
437	RHW21009	WASHER	[M]
438	RHW42002	STOPPER WASHER	[M]
440	RMF0237-1	FELT	[M]

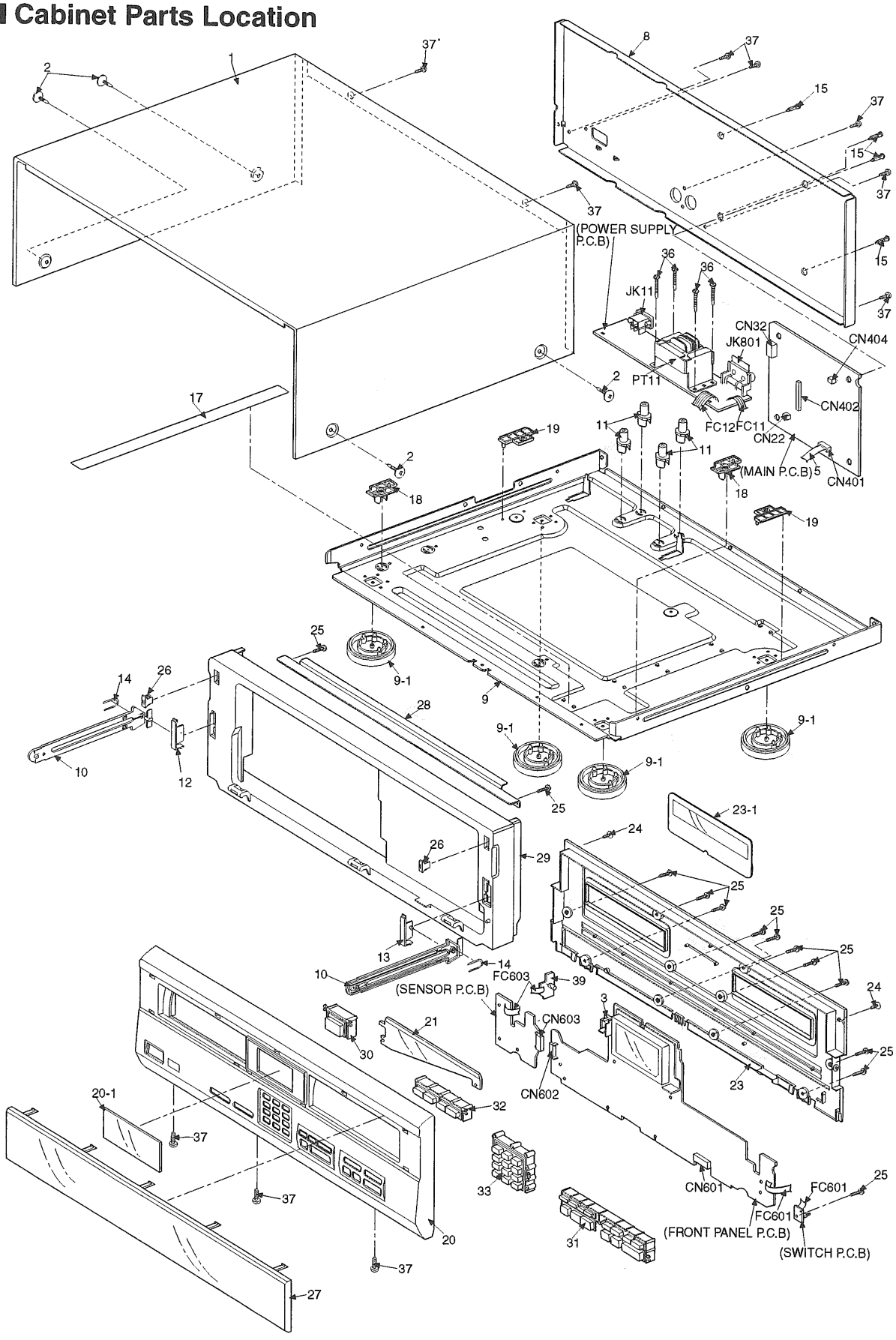
■ Loading Mechanism Parts

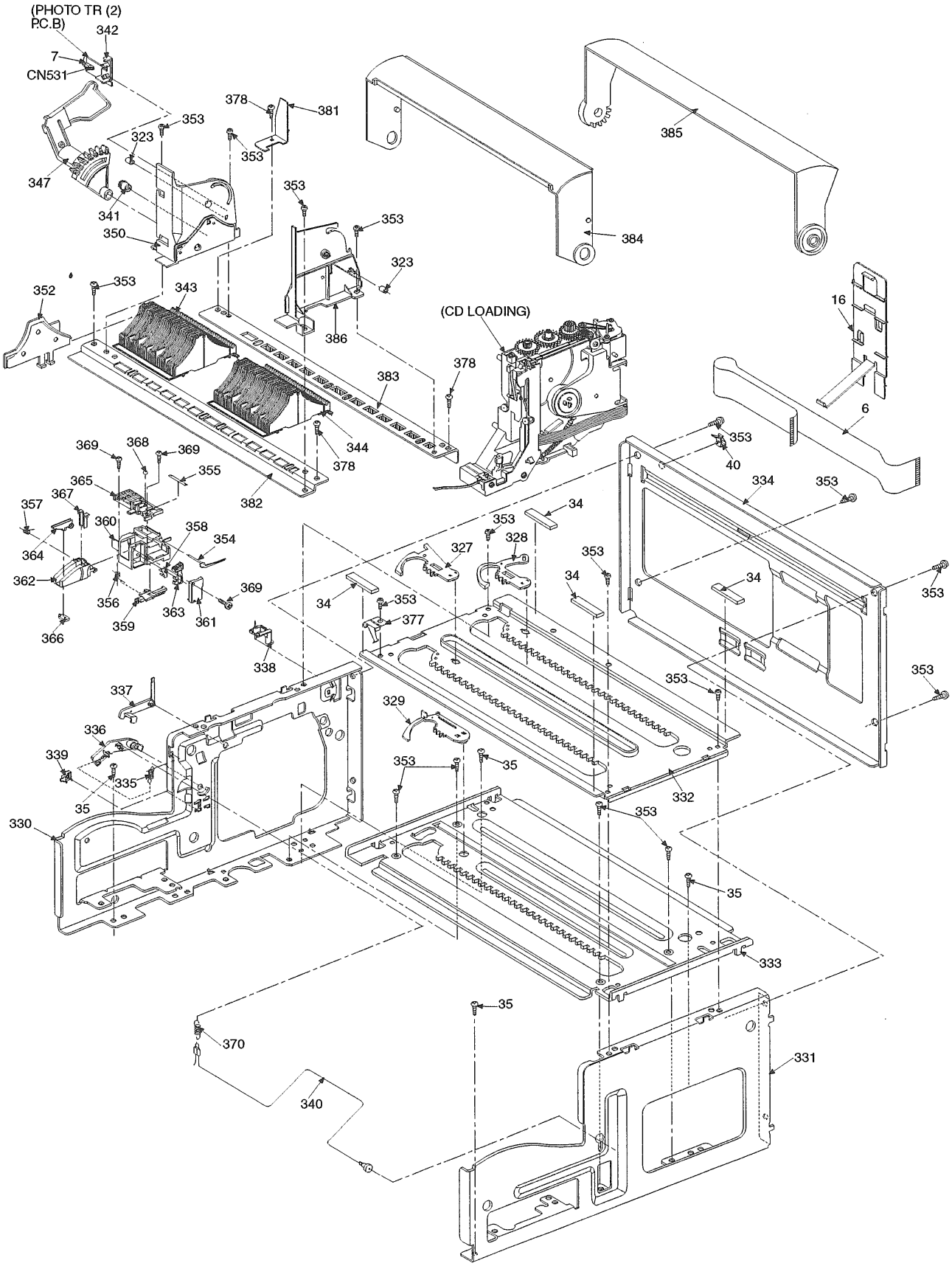


Note : When changing loading mechanism parts, apply specified grease to the areas marked "XX" as shown in the drawing.

Ref. No.	Part No.
❶	RFKXPG671

■ Cabinet Parts Location




(PHOTO TR (2) P.C.B)
342
7
CN531
347
353
323
341
350
378
381
353
353
353
323
386
352
353
343
344
378
383
(CD LOADING)
378
385
384
16
6
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334
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369
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382
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339
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35
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329
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35
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333
35
370
340
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■ Replacement Parts List

Notes: * Important safety notice :
Components identified by ⚠ mark have special characteristics important for safety.
Furthermore, special parts which have purposes of fire-retardant (resistors), high-quality sound (capacitors), low-noise (resistors), etc. are used.
When replacing any of components, be sure to use only manufacturer's specified parts shown in the parts list.
* The parenthesized in the Remarks columns specify the areas. (Refer to the cover page for area.)
Parts without these indication can be used for all areas.
* Warning : This product uses a laser diode. Refer to caution statement on page 2.
* [M] in Remarks column indicates parts that are supplied by **MESA**.
* The "(SF)" mark denotes the standard part.
* Please refer to Percaution for BLUE LED for item marked with " ** ".

Ref No.	Part No.	Part Name & Description	Remarks
		CABINET AND CHASSIS	
1	RKM0336-K	TOP CABINET	[M]
2	SNE2129-3	SCREW	[M]
3	RMN0443	FL HOLDER	[M]
5	REE0867	20P FFC	[M]
6	REZ0988	36P FFC	[M]
7	REZ0905-2	3P FFC	[M]
8	RGR0247A-TA	REAR PANEL	[M]P
8	RGR0247A-UA	REAR PANEL	[M]PC
9	RFKJLMC70P-K	BOTTOM CHASSIS ASS'Y	[M]
9-1	RKA0079-A	FOOT	[M]
10	RKJ0016	SIDE STAY	[M]
11	RKQ0089-J	PCB HOLDER	[M]
12	RKQ0193-K	SIDE GRILL (L)	[M]
13	RKQ0194-K	SIDE GRILL (R)	[M]
14	RME0209	STAY SPRING	[M]
15	RMN0341	PCB HOLDER	[M]
16	RMR0950-K	FFC HOLDER	[M]
17	RMR0961-Q	FFC COVER	[M]
18	RMX0115	MECHA SPACER A	[M]
19	RMX0116	MECHA SPACER B	[M]
20	RFKGLMC3P-K	FRONT PANEL ASS'Y	[M]
20-1	RGK1040-Q	FL FILTER	[M]
21	RGL0414-Q	PRISM (L)	[M]
23	RFKHLMC3P-K	BACK PANEL ASS'Y	[M]
23-1	RGK1041-Q	BACK ORNAMENT PLATE	[M]
24	RHD26023-K	SCREW	[M]
25	RHD26028-T	SCREW	[M]
26	RKG0009	MAGNET CATCH	[M]
27	RKW0543-Q	WINDOW	[M]
28	RMA0998	MECHA ANGLE	[M]
29	RFKNLMC3P-K	GRILLE ASS'Y	[M]
30	RGU1649-K	POWER BUTTON	[M]
31	RGU1650-K	MAIN BUTTON	[M]
32	RGU1651-K	PROGRAM BUTTON	[M]
33	RGU1653-K	12 KEY BUTTON	[M]
34	RMG0429-K	CUSHION RUBBER	[M]
35	XTB3+10FFZ	SCREW	[M]
36	XTB3+20JFZ	SCREW	[M]
37	XTBS3+8JFZ1	SCREW	[M]
39	RFKBLMC3P-K	BLUE LED PCB ASS'Y	[M] **
40	SHRD163	CORD HOLDER	[M]
		INTEGRATED CIRCUITS	
IC11	BA05T	IC, 5V REGULATOR	[M] ⚠
IC401	UPD78043F045	IC, MICRO COMPUTER	[M]
IC461	BA6247N	IC	[M]
IC601	UPD780T6G034	IC, MICRO COMPUTER	[M]
IC602	AT24C64	IC, EEPROM	[M]
IC603	RCDGP1U28XD	IC, REMOTE SENSOR	[M]
IC701	AN8837SBE1	IC, HEAD AMP	[M]
IC702	MN662741RPA	IC, DIGITAL LSI	[M]
IC703	AN8780NSBE2	IC, MOTOR DRIVER	[M]
IC801	BA4558FDXE2	IC	[M]
		TRANSISTORS	
Q11	RVTDTC114YST	TRANSISTOR	[M]
Q12	RVTDTA114YST	TRANSISTOR	[M]
Q13	RVTDTA114YST	TRANSISTOR	[M]
Q15	2SD2136PQRTA	TRANSISTOR	[M] ⚠
Q31	2SB1238QRTV2	TRANSISTOR	[M] ⚠
Q32	2SD1450STA	TRANSISTOR	[M]
Q33	2SD1450STA	TRANSISTOR	[M]
Q41	2SD1862QTV2	TRANSISTOR	[M] ⚠
Q461	RVTDTC114TST	TRANSISTOR	[M]
Q501	2SB1320AQRTA	TRANSISTOR	[M]
Q502	2SC3311AIQST	TRANSISTOR	[M]
Q521	PT4810F	PHOTO TRANSISTOR	[M]
Q522	PT480F	PHOTO TRANSISTOR	[M]
Q531	PT480F	PHOTO TRANSISTOR	[M]
Q621	RVTDTC114YST	TRANSISTOR	[M]
Q623	2SB1238QRTV2	TRANSISTOR	[M]
Q651	2SC2785FETA	TRANSISTOR	[M]
Q701	2SA1037AKSTX	TRANSISTOR	[M]
Q702	DTC114YKA146	TRANSISTOR	[M]
Q801	2SD1450STA	TRANSISTOR	[M]
Q802	2SD1450STA	TRANSISTOR	[M]
Q851	RVTDTA124EST	TRANSISTOR	[M]
Q852	RVTDTC124EST	TRANSISTOR	[M]
		DIODES	
D11	RL1N4003N02	DIODE	[M] ⚠
D12	RL1N4003N02	DIODE	[M] ⚠
D13	RL1N4003N02	DIODE	[M] ⚠
D14	RL1N4003N02	DIODE	[M] ⚠
D15	MTZJ9R1BTA	DIODE	[M] ⚠
D16	RL1N4003N02	DIODE	[M]
D17	1SS291TA	DIODE	[M]
D21	RL1N4003N02	DIODE	[M] ⚠
D22	RL1N4003N02	DIODE	[M] ⚠
D23	MTZJ9R1BTA	DIODE	[M] ⚠
D24	MTZJ9R1BTA	DIODE	[M] ⚠
D26	RL1N4003N02	DIODE	[M] ⚠
D27	RL1N4003N02	DIODE	[M] ⚠
D31	RL1N4003N02	DIODE	[M] ⚠
D32	RL1N4003N02	DIODE	[M] ⚠
D33	MTZJ36ATA	DIODE	[M] ⚠
D34	MTZJ7R5CTA	DIODE	[M] ⚠
D35	MA165TA	DIODE	[M]
D41	MTZJ6R2CTA	DIODE	[M] ⚠
D42	RVD1SS133TA	DIODE	[M]
D43	1SS291TA	DIODE	[M]
D51	RVD1SS133TA	DIODE	[M] ⚠
D52	RVD1SS133TA	DIODE	[M] ⚠
D53	MTZJ5R1BTA	DIODE	[M] ⚠
D54	RVD1SS133TA	DIODE	[M]
D461	MTZJ7R5CTA	DIODE	[M]
D511	RSQGP1S53V	DIODE	[M]
D521	LN66S	DIODE	[M]
D522	GL480V	DIODE	[M]
D523	BR3433S	LED	[M]
D531	GL480V	LED	[M]
D601	MTZJ5R1BTA	DIODE	[M]

Ref No.	Part No.	Part Name & Description	Remarks
D602	MTZJ5R1BTA	DIODE	[M]
D630	MTZJ3R0BTA	DIODE	[M]
D801	RVD1SS133TA	DIODE	[M]
D802	RVD1SS133TA	DIODE	[M]
		VARIABLE RESISTORS	
VR501	EVMLGGA00B14	V.R	[M]
		SWITCHES	
S501	RSP1A017-A	SW, MLOCK	[M]
S502	RSH1A005	SW, CLAMP	[M]
S503	RSH1A005	SW, FREE	[M]
S601	EVQ21405R	SW, SINGLE	[M]
S602	EVQ21405R	SW, ID SCAN	[M]
S603	EVQ21405R	SW, RANDOM	[M]
S604	EVQ21405R	SW, PROGRAM	[M]
S605	EVQ21405R	SW, 1	[M]
S606	EVQ21405R	SW, 2	[M]
S607	EVQ21405R	SW, 3	[M]
S608	EVQ21405R	SW, 4	[M]
S609	EVQ21405R	SW, 5	[M]
S610	EVQ21405R	SW, 6	[M]
S611	EVQ21405R	SW, 7	[M]
S612	EVQ21405R	SW, 8	[M]
S613	EVQ21405R	SW, 9	[M]
S614	EVQ21405R	SW, DISC CAPS	[M]
S615	EVQ21405R	SW, 0	[M]
S616	EVQ21405R	SW, >=10	[M]
S617	EVQ21405R	SW, TEXT EDIT	[M]
S618	EVQ21405R	SW, TEXT MODE	[M]
S619	EVQ21405R	SW, DOWN	[M]
S620	EVQ21405R	SW, UP	[M]
S621	EVQ21405R	SW, ENTER	[M]
S622	EVQ21405R	SW, DISC SKIP (-)	[M]
S623	EVQ21405R	SW, DISC SKIP (+)	[M]
S624	EVQ21405R	SW, SEARCH CHAPTER <<	[M]
S625	EVQ21405R	SW, SEARCH CHAPTER >>	[M]
S626	EVQ21405R	SW, STOP	[M]
S627	EVQ21405R	SW, PAUSE	[M]
S628	EVQ21405R	SW, SKIP/CURSOR I<<	[M]
S629	EVQ21405R	SW, SKIP/CURSOR >>I	[M]
S630	EVQ21405R	SW, PLAY	[M]
S631	EVQ21405R	SW, POWER	[M]
S632	RSH1A91ZA-A	SW, CD	[M]
S701	RSH1A043-U	SW, REST	[M]

Ref No.	Part No.	Part Name & Description	Remarks
		CONNECTORS	
CN22	RJS1A6603T1	TAPING CONNECTOR	[M]
CN23	RJS1A6606T1	TAPING CONNECTOR	[M]
CN401	RJS1A9414	FF CONNECTOR	[M]
CN402	RJS2A3336M	36P FFC CONNECTER	[M]
CN404	RJS1A6603T1	TAPING CONNECTOR	[M]
CN501	RJS2A3332	36P CONNECTOR	[M]
CN502	RJS1A6223-1	23P CONNECTOR	[M]
CN503	RJT057W007-1	7P CONNECTOR	[M]
CN504	RJS7T4ZA	7P CONNECTOR	[M]
CN511	RJU057W007	7P SOCKET	[M]
CN521	RJS7T7ZA	7P CONNECTOR	[M]
CN531	RJS3T6ZA	3P CONNECTOR	[M]
CN601	RJS1A6714-J	14P CONNECTOR	[M]
CN602	SJS50882JQH	CONNECTOR	[M]
CN603	SJT30845JQ	CONNECTOR	[M]
CN701	RJS2A6016	16P FFC CONNECTOR	[M]
CN702	RJS1A6723-1Q	23P FFC CONNCETOR	[M]
		COILS & TRANSFORMERS	
L11	SLQX400-D	RADIO FREQ COIL	[M] ⚠
L12	SLQX400-D	RADIO FREQ COIL	[M] ⚠
L701	RLBN102V-Y	CHIP INDUCTOR	[M]
L702	RLBN102V-Y	CHIP INDUCTOR	[M]
PT11	RTP1K4C023-X	POWER TRANSFORMER	[M] ⚠
		OSCILLATORS	
X401	RSXY4M91M01T	CERAMIC OSCILLATOR	[M]
X601	RSXY4M91M01T	CERAMIC OSCILLATOR	[M]
X701	RSXB16M9J02T	CRYSTAL OSCILLATOR	[M]
		WIRE HOLDERS	
FC11	REZ0899	3P WIRE KIT	[M]
FC12	REZ0898	6P WIRE KIT	[M]
FC601	REZ1115	3P WIRE (O/C)	[M]
FC603	REZ1117	3P WIRE (LED)	[M]
		DISPLAY TUBE	
FL601	RSL0240-F	FL	[M]

Ref No.	Part No.	Part Name & Description	Remarks
		JACKS	
JK11	SJSD16-1	JK, AC INLET	[M] ⚠
JK801	RJH3201N	JK, RCA	[M]
		PACKING MATERIALS	
P1	RPG3932	PACKING CASE	[M]
P2	RPN1009	CUSHION	[M]
P3	RPFX0012	MIRAMAT BAG	[M]
		ACCESSORIES	
A1	EUR645270	REMOCONTRANSMITTER	[M]
A1-1	UR64EC1987B	R/C BATTERY COVER	[M]
A2	SJA172	AC CORD (SF)	[M] ⚠
A3	RQT4451-P	O/I BOOK	[M]
A3	RQT4452-C	O/I BOOK	[M]PC
A4	RJL2P004B08	ST. CONNECTOR CABLE	[M]

■ Resistors & Capacitors

Notes : * Important safety notice:
Components identified by ⚠ mark have special characteristics important for safety.
Furthermore, special parts which have purposes of fire-retardant (resistors), high-quality sound (capacitors), low-noise (resistors),etc. are used.
When replacing any of components, be sure to use only manufacturer's specified parts shown in the parts list.
* Capacitor values are in microfarad (μF) unless specified otherwise, P=Pico-farads (pF) F=Farads (F)
* Resistors values are in ohms, unless specified otherwise, 1k=1,000(OHM), 1M=1,000k(OHM)

Ref No.	Part No.	Values & Remarks
	RESISTORS	
R11	ERDS2TJ151T	150 1/4W [M]
R12	ERDS2TJ151T	150 1/4W [M]
R21	ERDS2TJ102T	1K 1/4W [M]
R22	ERDS2TJ102T	1K 1/4W [M]
R31	ERDS2TJ822T	8.2K 1/4W [M]
R32	ERDS2TJ223T	22K 1/4W [M]
R33	ERDS2TJ223T	22K 1/4W [M]
R41	ERDS2TJ471T	470 1/4W [M]
R42	ERDS2TJ8R2T	8.2 1/4W [M]
R51	ERDS2TJ122T	1.2K 1/4W [M]
R52	ERDS2TJ122T	1.2K 1/4W [M]
R401	ERDS2TJ103T	10K 1/4W [M]
R402	ERDS2TJ473T	47K 1/4W [M]
R403	ERDS2TJ472T	4.7K 1/4W [M]
R404	ERDS2TJ472T	4.7K 1/4W [M]
R405	ERDS2TJ472T	4.7K 1/4W [M]
R406	ERDS2TJ472T	4.7K 1/4W [M]
R407	ERDS2TJ472T	4.7K 1/4W [M]
R408	ERDS2TJ103T	10K 1/4W [M]
R409	ERDS2TJ103T	10K 1/4W [M]
R410	ERDS2TJ104T	100K 1/4W [M]
R411	ERDS2TJ181T	180 1/4W [M]
R412	ERDS2TJ472T	4.7K 1/4W [M]
R413	ERDS2TJ181T	180 1/4W [M]
R417	ERDS2TJ103T	10K 1/4W [M]
R420	ERDS2TJ472T	4.7K 1/4W [M]
R421	ERDS2TJ103T	10K 1/4W [M]
R461	ERDS2TJ271T	270 1/4W [M]
R462	ERDS2TJ331T	330 1/4W [M]
R463	ERDS2TJ821T	820 1/4W [M]
R464	ERDS2TJ821T	820 1/4W [M]
R501	ERDS2FJ103	10K 1/4W [M]
R502	ERDS2FJ103	10K 1/4W [M]
R503	ERDS2FJ102	1K 1/4W [M]
R601	ERDS2TJ472T	4.7K 1/4W [M]
R602	ERDS2TJ472T	4.7K 1/4W [M]
R603	ERDS2TJ472T	4.7K 1/4W [M]
R604	ERDS2TJ472T	4.7K 1/4W [M]
R605	ERDS2TJ472T	4.7K 1/4W [M]
R606	ERDS2TJ472T	4.7K 1/4W [M]
R607	ERDS2TJ472T	4.7K 1/4W [M]
R610	ERDS2TJ331T	330 1/4W [M]
R611	ERDS2TJ331T	330 1/4W [M]
R612	ERDS2TJ100T	10 1/4W [M]
R613	ERDS2TJ100T	10 1/4W [M]
R614	ERDS2TJ100T	10 1/4W [M]
R615	ERDS2TJ100T	10 1/4W [M]
R616	ERDS2TJ100T	10 1/4W [M]
R617	ERDS2TJ100T	10 1/4W [M]
R618	ERDS2TJ100T	10 1/4W [M]
R621	ERDS2TJ332T	3.3K 1/4W [M]
R623	ERDS2TJ151T	150 1/4W [M]
R625	ERDS2TJ100T	10 1/4W [M]
R631	ERDS2TJ103T	10K 1/4W [M]
R632	ERDS2TJ102T	1K 1/4W [M]
R651	ERDS2TJ103T	10K 1/4W [M]
R652	ERDS2TJ471T	470 1/4W [M]
R653	ERDS2TJ103T	10K 1/4W [M]
R673	ERDS2TJ105T	1M 1/4W [M]
R701	ERJ6GEYJ4R7A	4.7 1/10W[M]
R702	ERJ6GEYJ822A	8.2K 1/10W[M]
R703	ERJ6GEYJ823A	82K 1/10W[M]
R704	ERJ6GEYJ102A	1K 1/10W[M]
R705	ERJ6GEYJ124A	120K 1/10W[M]
R706	ERJ6GEYJ102A	1K 1/10W[M]
R707	ERJ6GEYJ474A	470K 1/10W[M]
R708	ERJ6GEYJ154A	150K 1/10W[M]
R709	ERJ6GEYJ473A	47K 1/10W[M]
R710	ERJ6GEYJ103A	10K 1/10W[M]
R711	ERJ6GEYJ154A	150K 1/10W[M]
R712	ERJ6GEYJ221A	220 1/10W[M]
R714	ERJ6GEYJ121A	120 1/10W[M]
R715	ERJ6GEYJ122A	1.2K 1/10W[M]
R717	ERJ6GEYJ102A	1K 1/10W[M]
R718	ERJ6GEYJ102A	1K 1/10W[M]
R721	ERJ6GEYJ101A	100 1/10W[M]
R722	ERJ6GEYJ563A	56K 1/10W[M]
R723	ERJ6GEYJ182A	1.8K 1/10W[M]
R724	ERJ6GEYJ333A	33K 1/10W[M]
R725	ERJ6GEYJ122A	1.2K 1/10W[M]
R726	ERJ6GEYJ473A	47K 1/10W[M]
R727	ERJ6GEYJ682A	6.8K 1/10W[M]
R728	ERJ6GEYJ682A	6.8K 1/10W[M]
R729	ERJ6GEYJ562A	5.6K 1/10W[M]
R731	ERJ6GEYJ822A	8.2K 1/10W[M]
R735	ERJ6GEYJ101A	100 1/10W[M]
R736	ERJ6GEYJ101A	100 1/10W[M]
R744	ERJ6GEYJ104A	100K 1/10W[M]
R745	ERJ6GEYJ155A	1.5M 1/10W[M]
R748	ERJ6GEYJ182A	1.8K 1/10W[M]
R749	ERJ6GEYJ682A	6.8K 1/10W[M]
R752	ERJ8GEYJ220A	22 1/8W [M]
R803	ERDS2TJ224T	220K 1/4W [M]
R804	ERDS2TJ224T	220K 1/4W [M]
R805	ERDS2TJ822T	8.2K 1/4W [M]
R806	ERDS2TJ822T	8.2K 1/4W [M]
R807	ERDS2TJ123T	12K 1/4W [M]
R808	ERDS2TJ123T	12K 1/4W [M]
R809	ERDS2TJ333T	33K 1/4W [M]
R810	ERDS2TJ333T	33K 1/4W [M]
R811	ERDS2TJ333T	33K 1/4W [M]
R812	ERDS2TJ333T	33K 1/4W [M]
R813	ERDS2TJ102T	1K 1/4W [M]
R814	ERDS2TJ102T	1K 1/4W [M]
R815	ERDS2TJ102T	1K 1/4W [M]
R816	ERDS2TJ102T	1K 1/4W [M]
R817	ERDS2TJ473T	47K 1/4W [M]
R818	ERDS2TJ473T	47K 1/4W [M]
R819	ERDS2TJ100T	10 1/4W [M]
R820	ERDS2TJ100T	10 1/4W [M]
R851	ERDS2TJ222T	2.2K 1/4W [M]
	CAPACITORS	
C11	ECBT1E103ZF5	0.01 25V [M]
C12	ECA1CM222EV ⚠	22 16V [M]
C15	ECBT1H102KB5	1000P50V [M]
C16	ECA1AM471B	470P 10V [M]
C17	ECEA0JKA101B	100 6.3V [M]
C18	ECEA1HKA010B	1 50V [M]
C20	ECBT1E103ZF5	0.01 25V [M]
C21	RCA1VM101BT ⚠	100P 35V [M]
C22	RCA1VM101BT ⚠	100P 35V [M]
C23	ECEA1EM471B	470 25V [M]
C24	ECEA1EM471B	470 25V [M]
C30	ECBT1E103ZF5	0.01 25V [M]
C31	ECA1HM470B	47P 50V [M]
C32	ECA1HM470B	47P 50V [M]
C33	ECBT1H102KB5	1000P50V [M]
C41	ECBT1H102KB5	1000P50V [M]
C42	ECEA0JKA101B	100 6.3V [M]
C43	ECA0JM102B	02 6.3V [M]
C44	ECEA1HKA010B	1 50V [M]
C401	ECBT1C103NS5	0.01 16V [M]
C402	ECEA0JKA101B	100 6.3V [M]
C403	ECBT1H221KB5	220P 50V [M]
C404	ECBT1H221KB5	220P 50V [M]
C405	ECBT1C103NS5	0.01 16V [M]
C406	ECBT1H102KB5	1000P50V [M]
C407	ECBT1C103NS5	0.01 16V [M]
C408	ECBT1C103NS5	0.01 16V [M]
C409	ECBT1C103NS5	0.01 16V [M]
C410	ECBT1C103NS5	0.01 16V [M]
C411	ECBT1C103NS5	0.01 16V [M]
C412	ECBT1C103NS5	0.01 16V [M]
C461	ECEA1AKA470B	47 10V [M]
C601	ECBT1C103NS5	0.01 16V [M]
C602	ECBT1H102KB5	1000P50V [M]
C603	ECBT1C103NS5	0.01 16V [M]
C604	ECBT1H391KB5	390P 50V [M]
C605	ECFR1E104ZF5	0.1 25V [M]
C606	ECEA0JKA101B	100 6.3V [M]
C607	ECBT1C103NS5	0.01 16V [M]
C651	ECEA1HKA010B	1 50V [M]
C652	ECEA1EKA4R7B	4.7 25V [M]
C701	ECEA0JKA330I	33 6.3V [M]
C702	ECUZ1E104MBN	0.1 25V [M]
C703	ECEA0JKA101I	100 6.3V [M]
C704	ECUZ1E104MBN	0.1 25V [M]
C706	ECUZ1H272KBN	2700P50V [M]
C707	ECUZ1E273KBN	0.027 25V [M]
C708	ECUZ1H392KBN	3900P50V [M]
C709	ECUZ1E563KBN	0.056 25V [M]
C710	ECUV1H151KCN	150P 50V [M]
C711	ECUZ1E104ZFN	0.1 25V [M]
C712	ECUZ1E104ZFN	0.1 25V [M]

Ref No.	Part No.	Values & Remarks
C713	ECUZ1E104MBN	0.1 25V [M]
C714	ECEA0JKA101I	100 6.3V [M]
C715	ECUZ1H182KBN	1800P 50V [M]
C716	ECUZ1H821KBN	820P 50V [M]
C717	ECUZ1E104ZFN	0.1 25V [M]
C718	ECUZ1C224KBN	0.22 16V [M]
C721	ECUZ1H100DCN	10P 50V [M]
C722	ECUZ1H100DCN	10P 50V [M]
C723	ECEA1AKA221I	220 10V [M]
C724	ECUZ1E104MBN	0.1 25V [M]
C725	ECUZ1H102KBN	1000P 50V [M]
C726	ECUZ1H102KBN	1000P 50V [M]
C727	ECA1HAK010XI	1 50V [M]
C728	ECA1HAK010XI	1 50V [M]

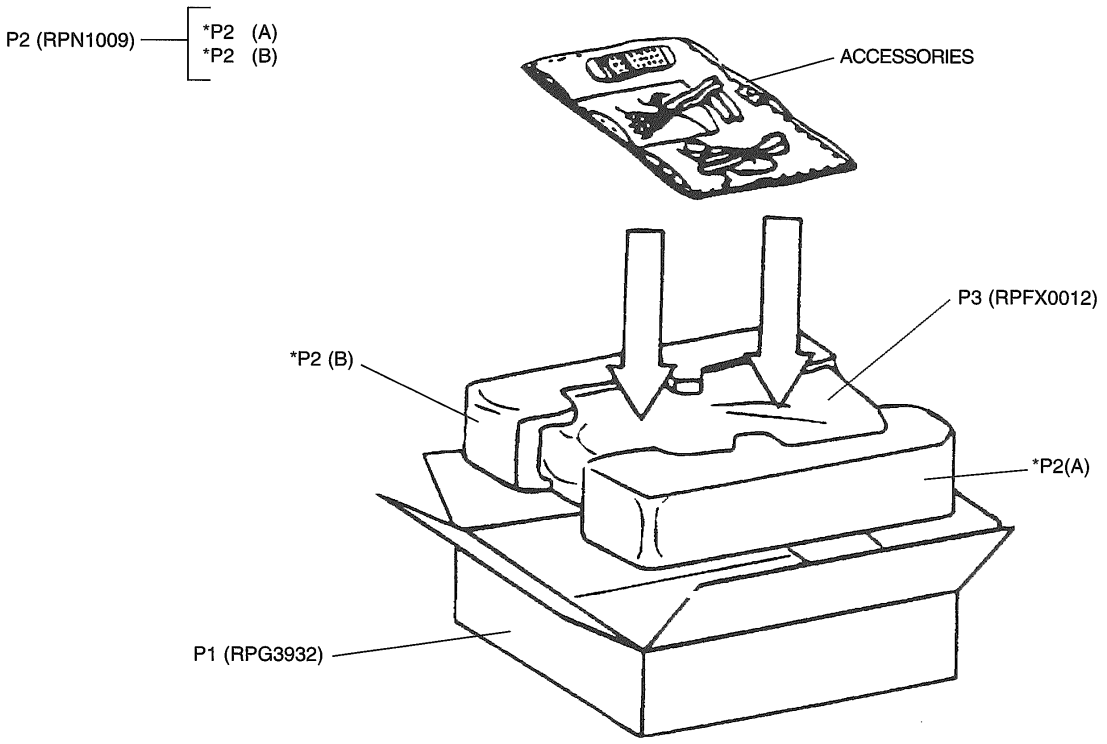
Ref No.	Part No.	Values & Remarks
C730	ECUZ1E104ZFN	0.1 25V [M]
C731	ECEA0JKA221I	220 6.3V [M]
C732	ECEA0JKA221I	220 6.3V [M]
C733	ECUZ1E104MBN	0.1 25V [M]
C734	ECEA1AKA221I	220 10V [M]
C735	ECUZ1E104ZFN	0.1 25V [M]
C736	ECUZ1E104ZFN	0.1 25V [M]
C737	ECUZ1E104ZFN	0.1 25V [M]
C738	ECUZ1E104MBN	0.1 25V [M]
C739	ECUZ1H102KBN	1000P 50V [M]
C742	ECUZ1E273KBN	0.027 25V [M]
C743	ECUZ1E104ZFN	0.1 25V [M]
C744	ECUZ1E123KBN	0.012 25V [M]
C745	ECUZ1H102KBN	1000P 50V [M]

Ref No.	Part No.	Values & Remarks
C747	ECUV1H221KBN	220P 50V [M]
C749	ECUZ1H222KBN	2200P 50V [M]
C750	ECUZ1E104MBN	0.1 25V [M]
C751	ECUZ1E104MBN	0.1 25V [M]
C753	ECUZ1H471KBM	470P 50V [M]
C754	ECUZ1H471KBN	470P 50V [M]
C762	ECUZ1H471KBN	470P 50V [M]
C801	ECEA1AKA470B	47 10V [M]
C802	ECEA1AKA470B	47 10V [M]
C805	ECCR1H391J5	390P 50V [M]
C806	ECCR1H391J5	390P 50V [M]
C807	ECCR1H391J5	390P 50V [M]
C808	ECCR1H391J5	390P 50V [M]
C809	ECEA0JKA470B	47 6.3V [M]

Ref No.	Part No.	Values & Remarks
C810	ECEA0JKA470B	47 6.3V [M]
C811	ECBT1H102KB5	1000P 50V [M]
C812	ECBT1H102KB5	1000P 50V [M]
	TEST JUMPER	
TJ701	EYF8CU	TEST JUMPER[M]

ACCESSORIES

A1	(EUR645270)	: REMOTE CONTROL
A2	(SJA172)	: AC CORD
A3	(RQT4451-P)	: O/I BOOK
A3	(RQT4452-C ...PC)	: O/I BOOK
A4	(RJL2P004B08)	: ST. CONNECTOR CABLE



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ORDER NO. MD9706050C1
A6

Service Manual

COMPACT disc DIGITAL AUDIO

MASH※ multi-stage noise shaping

※ • MASH is a trademark of NTT.

Compact Disc Changer

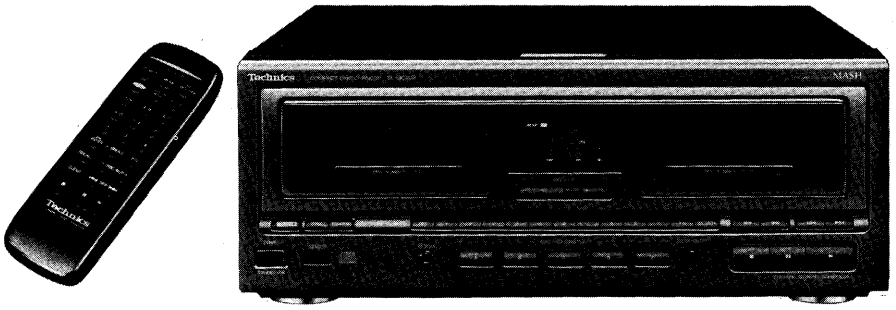
SL-MC410

Colour (K) .... Black Type

Areas

P ..... U.S.A.

PC ..... Canada.



Traverse Deck: RAE0150Z Mechanism Series

Specifications

■ AUDIO

No. of channels	2 (left and right, stereo)
Frequency response	2–20,000 Hz, ±1 dB
Output voltage	2 V (at 0 dB)
Dynamic range	92 dB
S/N	100 dB
Harmonic distortion	0.007% (1 kHz, 0 dB)
Wow and flutter	Below measurable limit
DA converter	※ MASH (1 bit)
Output impedance	Approx.1 kΩ
Load impedance	More than 10 kΩ

■ PICKUP

Wavelength	780 nm

■ GENERAL

Power consumption	11 W
Power supply	AC 120 V, 60 Hz
Dimensions (W × H × D)	430 × 170 × 387 mm (16-15/16" × 6-11/16" × 15-1/4")
Weight	7.0 kg (15.4 lb.)

Note:
Specifications are subject to change without notice.
Weight and dimensions are approximate.

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Contents

⚠WARNING

This service information is designed for experienced repair technicians only and is not designed for use by the general public. It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product. Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

■ Precaution of Laser Diode

CAUTION: This unit utilizes a class 1 laser. Invisible laser radiation is emitted from the optical pickup lens when the unit is turned on :

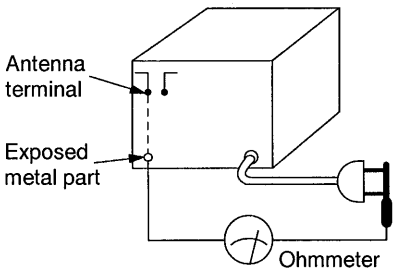
1. Do not look directly into the pickup lens.
2. Do not use optical instruments to look at the pickup lens.
3. Do not adjust the preset variable resistor on the optical pickup.
4. Do not disassemble the optical pickup unit.
5. If the optical pickup is replaced, use the manufactures specified replacement pickup only.
6. Use of control or adjustments or performance of procedures other than those specified herin may result in hazardous radiation exposure.

■ Safety Precaution (This "safety precaution" is applied only in U.S.A.)

1. Before servicing, unplug the power cord to prevent an electric shock.
2. When replacing parts, use only manufacture's recommended components for safety.
3. Check the condition of the power cord. Replace if wear or damage is evident.
4. After servicing, be sure to restore the lead dress, insulation barriers, insulation papers, shields, etc.
5. Before returning the serviced equipment to the customer, be sure to make the following insulation resistance test to prevent the customer from being exposed to a shock hazard.

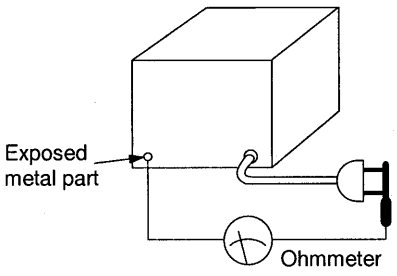
● INSULATION RESISTANCE TEST

1. Unplug the power cord and short the two prongs of the plug with a jump
2. Turn on the power switch.
3. Measure the resistance value with ohmmeter between the jumpered AC plug and each exposed metal cabinet part, such as screwheads antenna, control shafts, handle brackets, etc. Equipment with antenna terminals should read between 3MΩ and 5.2 MΩ to all exposed parts. (Fig. A) Equipment without antenna terminals should read approximately infinity to all exposed parts. (Fig. B)



(Fig. A)

Resistance=3MΩ–5.2MΩ



(Fig. B)

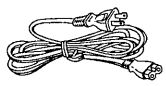
Resistance=Approx. ∞

Note: Some exposed parts may be isolated from the chassis by design. These will read infinity.

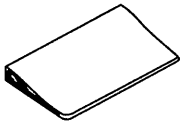
4. If the measurement is outside the specified limits, there is a possibility of a shock hazard. The equipment should be repaired and rechecked before it is returned to the customer.

■ Accessories

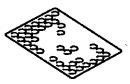
- AC power supply cord 1pc. (SJA172)



- Remote control transmitter 1pc. (EUR644376)



- FM indoor antenna 1pc. (RSA0006-J)



■ Precautions

Cautions on moving this unit

Before moving the changer to another location, be sure to remove all discs from the slots and turn off the changer.

Failure to do so will expose the compact discs and the changer to the risk of severe damage.

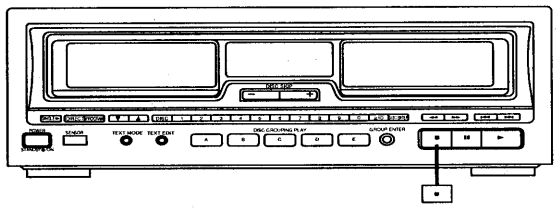
CAUTION

The changer mechanism automatically locks when power is turned off, to protect it against damage in transport. Therefore, always press POWER and make sure "OFF" appears on the display before you unplug the changer.

Other cautions

Outside light or noise may sometimes cause the changer to detect a disc when there isn't one. However, the changer always correctly detects the disc when in the play mode no matter what.

Do not leave the front panel open. Infiltrating dust or other matter may lead to damage or malfunctions.



When getting service

Before bringing in your changer for service, be sure to remove all discs first.

If the disc in play doesn't return to its slot when you press ■, hold the button down for about 4 seconds. The disc should return to the slot.

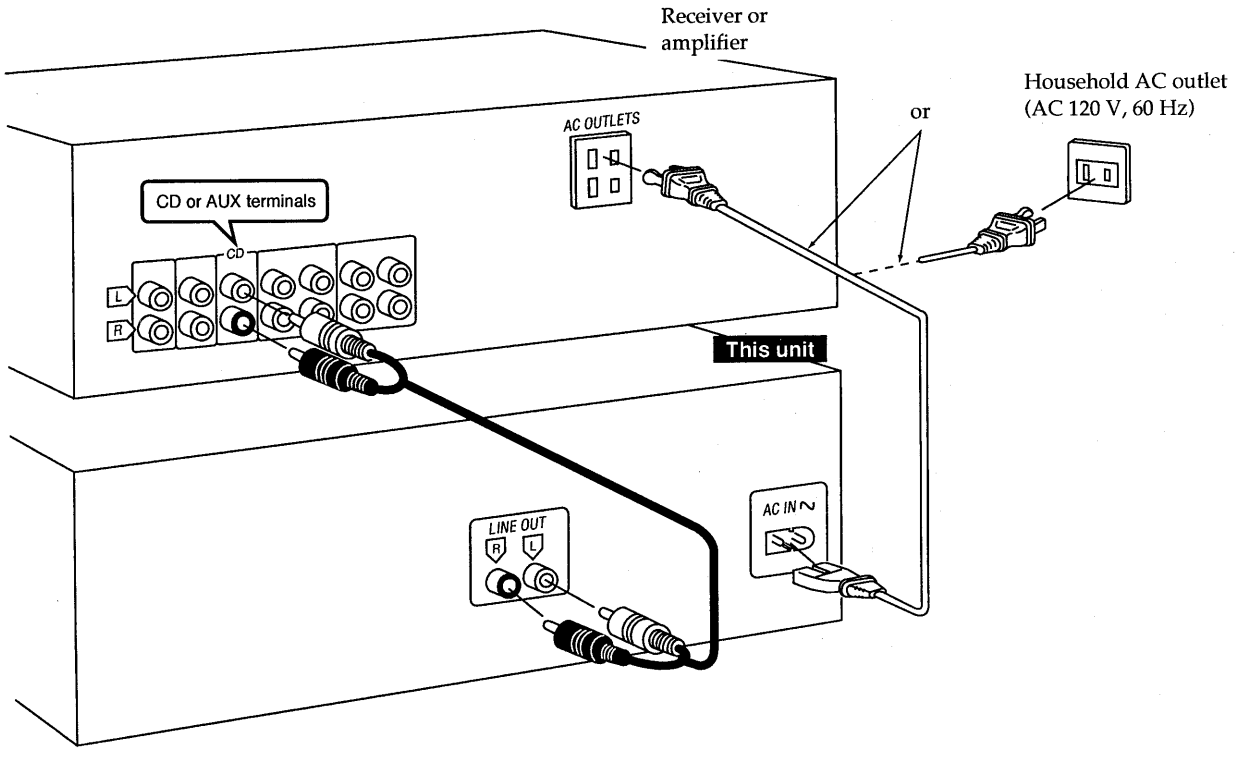
■ Connections

Note

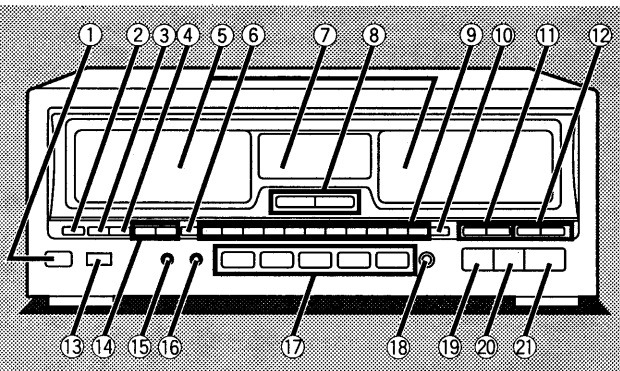
- Set the changer on a flat, level surface.
- Before connecting the changer to your audio system, make sure that the power of the changer and all other system components is turned off.

Stereo connection cable

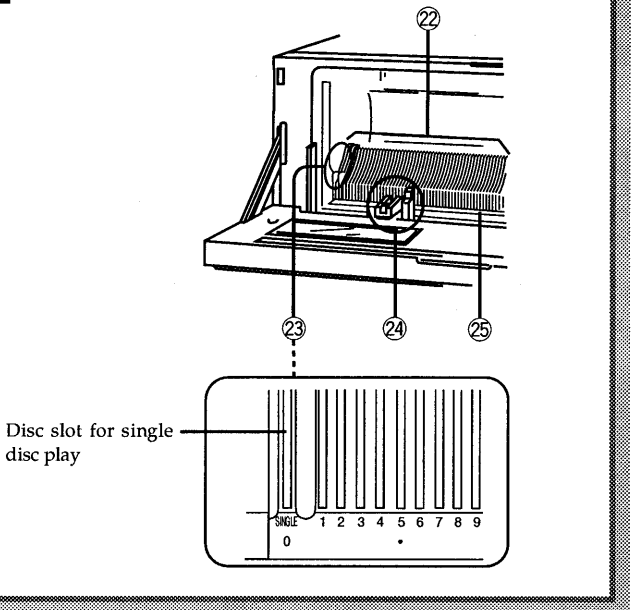
White (L)
Red (R)



■ Front Panel Control



A



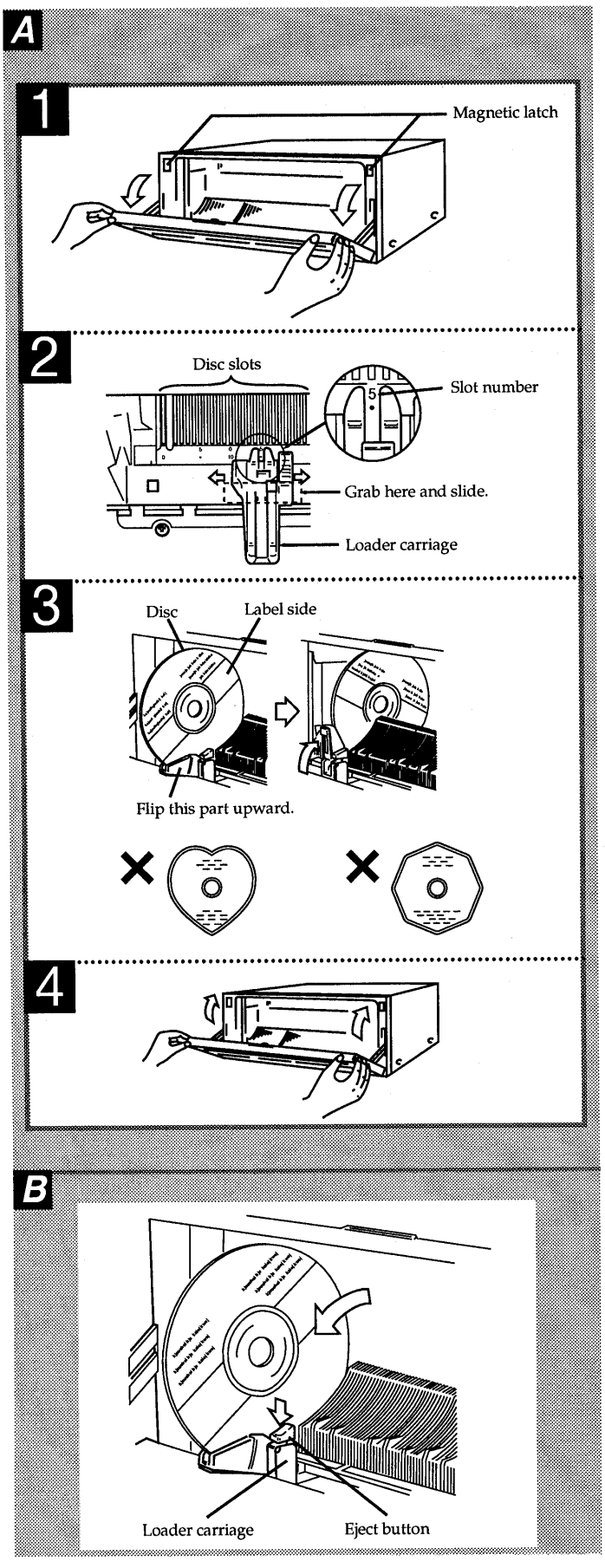
① **Power "STANDBY ⏻/ON" switch (POWER, STANDBY ⏻/ON)**
Press to switch the unit from on to standby mode or vice versa. In standby mode, the unit is still consuming a small amount of power.
② **Single disc play button (SINGLE ▶)**
③ **Direct programming button (DIRECT)**
④ **Programming button (PROGRAM)**
⑤ **Windows**
⑥ **Disc selector button (DISC)**
⑦ **Display**
⑧ **Disc skip buttons (DISC SKIP, –, +)**
⑨ **Numeric buttons (1-9, 0, ≥10)**
⑩ **Disc enter button (DISC ENTER)**
⑪ **Search/Text character select buttons (◀◀ , ▶▶ , SEARCH/CHARACTER)**
⑫ **Track skip/Text cursor removal buttons (⏮ , ⏭, SKIP/CURSOR)**
⑬ **Remote control signal sensor (SENSOR)**
⑭ **Text search buttons (▼, ▲)**
⑮ **Text mode button (TEXT MODE)**
⑯ **Text edit button (TEXT EDIT)**
⑰ **Disc group buttons (DISC GROUPING PLAY, A, B, C, D, E)**
⑱ **Group enter button (GROUP ENTER)**
⑲ **Stop button (■)**
⑳ **Pause button (❚❚)**
㉑ **Play button (▶)**

Disc slot section A

For an explanation on how to open the front panel, see page 7 "How to set discs".

㉒ **Disc slots**
㉓ **Disc slot for single disc play (SINGLE)**
㉔ **Loader carriage**
㉕ **Slot numbers**

■ Setting / Removing Discs



How to set discs

A

1 Pulling gently from both ends, open the front panel.

Caution

- Except when setting or removing discs, keep hands out of the changer while open. You could injure yourself if somehow entangled in the internal mechanism.
- Keep cassette tapes away from the magnetic latches.

2 Slide the loader carriage to the desired slot No. to insert a disc.

Note

Slot No. 0 (SINGLE) is reserved for single disc play.

3 Set the disc on the loader and flip the loader upwards.

Caution

- Do not use 3" (8 cm) discs fitted with expander rings. Expander rings could damage the disc slots.
- Do not use cleaning discs or warped discs. All of these could damage your changer.
- Do not use discs with poorly attached labels or stickers. Adhesive protruding from peeled off stickers can cause the changer to malfunction.
- Do not put anything other than discs in the changer.
- Do not use irregular shape CDs (heart-shape, octagonal, etc.).

4 Close the front panel gently.

Note

If you leave the front panel open while a disc is in play, when the disc is over, the changer will stop.

How to remove discs

B

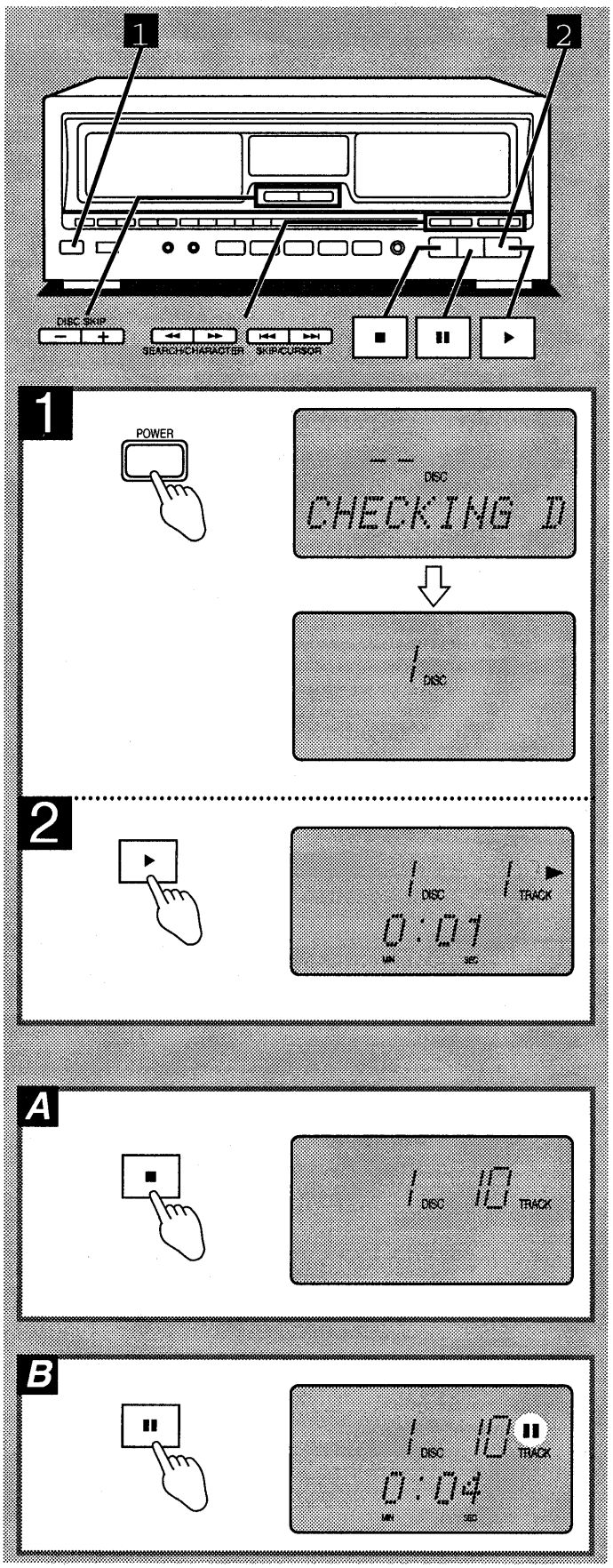
1. **Open the front panel.**
2. **Slide the loader carriage to the slot you want.**
3. **Press the eject button on the loader carriage.**

Special notes

You can set discs in the slots and remove them too, while playing discs.

- Do not set a disc in the slot of the disc being played (slot flashes). The disc in play is returned to its slot when finished. If two discs somehow jam in a slot, one or both could be damaged. When this happens, the message "TAKE OUT" will appear on the display. Remove the disc that doesn't belong in the slot and press the stop button.
- Do not open the front panel while the changer is changing discs.
- Sometimes the front panel cannot be opened while a disc is playing. It is a question of time. In such case, wait until you can open it.

■ Basic Operations



Sequential play

The changer plays all the tracks on all the discs in order and stops automatically when the last track on the last disc finishes playing.

Before starting, load your discs.

1 **Press POWER.**
The unit will switch on.
Momentarily, the message "CHECKING DISCS" will appear on the display.
When it goes out, the last disc played will be displayed.

2 **Press ▶.**
Play will begin.

The "▶" indication will illuminate.
The disc number, the track number and the elapsed play time will be displayed.
The disc number is the same as the slot number.

To search for the desired position	◀◀ ▶▶ SEARCH/CHARACTER
To skip tracks	⏮ ⏭ SKIP/CURSOR
To skip discs	DISC SKIP − +

To stop play A

Press ■.
The disc number and the total number of tracks of the current disc will be displayed.

The total playing time displayed includes the silent sections between tracks. For this reason, it may be a few seconds longer than the playing time indicated on the disc.
When you open the front panel, the total number of tracks and the total playing time go out.

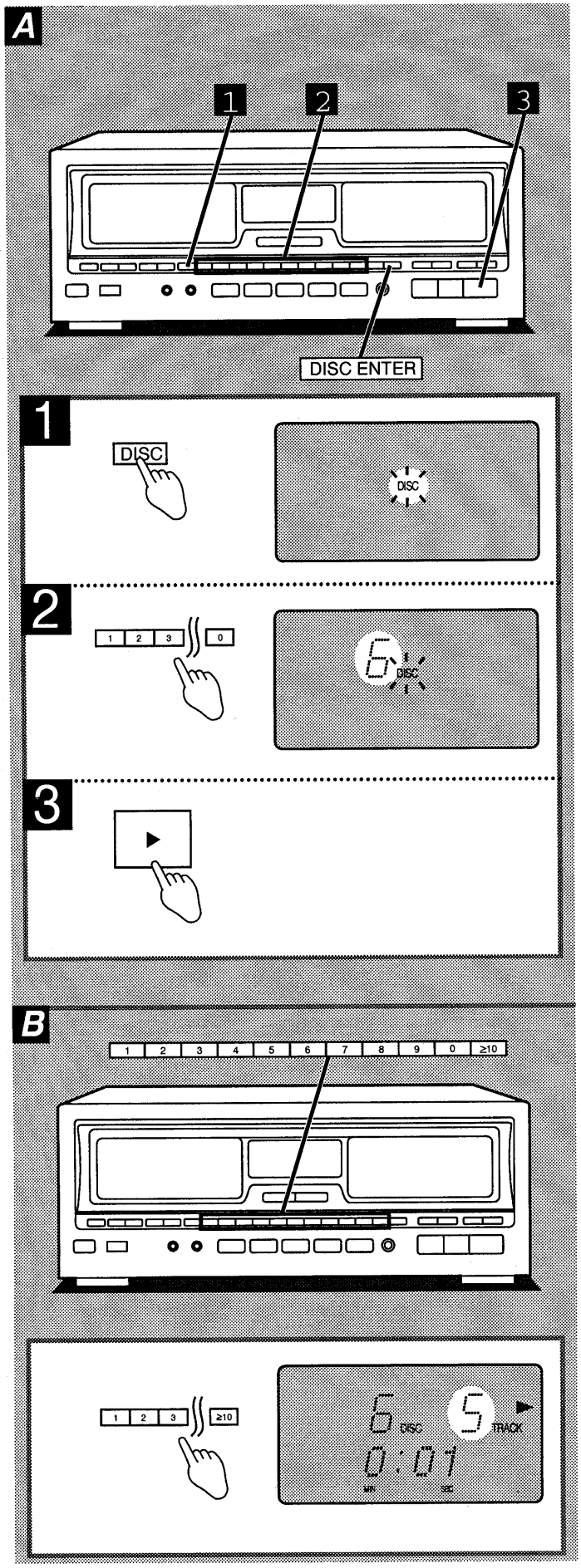
Press ▶ to re-start play.

Note
It takes roughly 3 seconds from the time you press ■ until the disc is returned to the slot.

To temporarily stop play B

Press ⏸.

Press ▶ to resume play.



To directly access a specific disc A

1 **Press DISC.**

2 [Within 7 seconds]
Select the disc you want with the numeric buttons.

To select a disc from 1 to 9
For example: "6"
[6]
To select a disc from 10 to 110
For example: "19"
[1] → [9]
Push the buttons within 7 seconds of each other.

Note
When selecting discs, the ≥10 button does not respond to touch.

3 [Within 7 seconds]
Press ▶.
The changer will start playing the selected disc from the first track.

For your reference

- If you press DISC ENTER instead of ▶ to select a disc, the disc number will be displayed but play will not start automatically.
- When in the stop mode, if you select an empty slot, the message "NO DISC" will appear on the display.
- While a disc is playing, if you select an empty slot, the changer will automatically play the next disc available.
- If you select "0", the changer will switch to the single disc play mode.

To directly access a specific track B

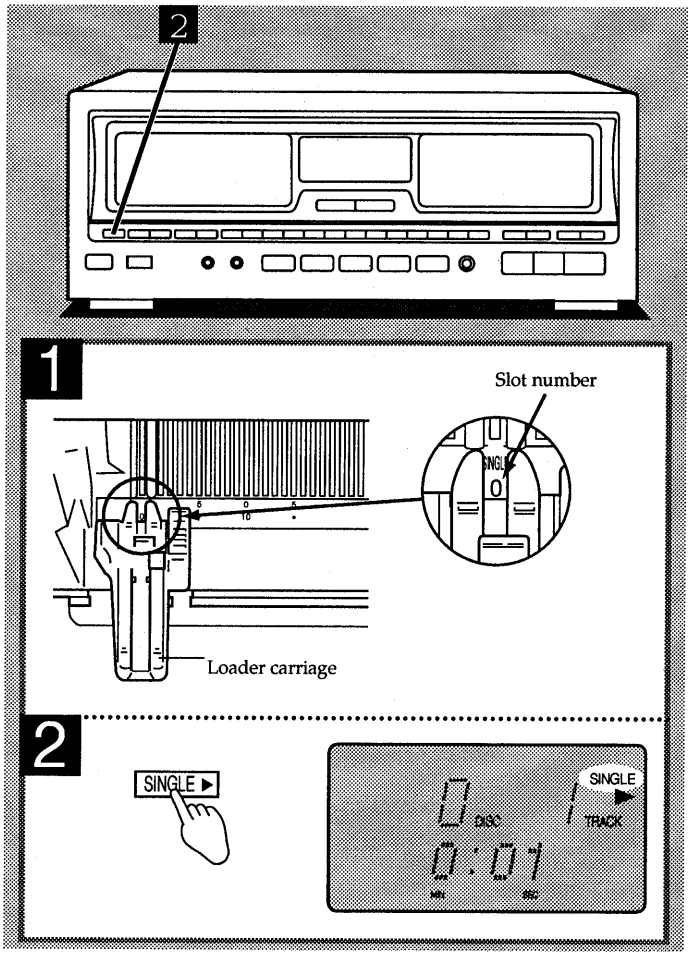
After selecting a disc, select a track with the numeric buttons.

Press the numeric button(s) to select the track.
Play will begin from the selected track.

To select a track from 1 to 9
For example: "6"
[6]

To select a two-digit track number 10 or higher
For example: "19"
[≥10] → [1] → [9]
Push the buttons within 7 seconds of each other.

■ Single Disc Play



Single disc play is convenient when wanting to playback a specific disc right away, without going through the usual selection procedure, for example, to listen to a disc you just bought.

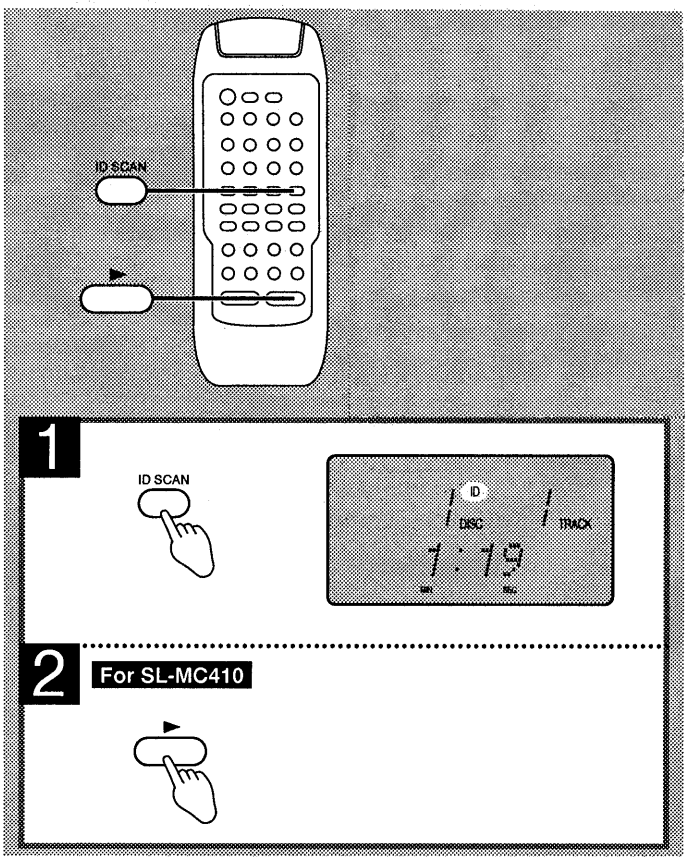
1 **Open the front panel, and set the disc in the slot No. 0.**
Face the disc label to the right and flip the loader upwards to set the disc.

2 **Close the front panel and press SINGLE ▶.**

The changer plays all the tracks in order and stops automatically when the last track finishes playing.

To cancel single disc play mode

- Select another disc with the numeric buttons.
- Skip to another disc with DISK SKIP (– or +).
- Select a group.



(Only available from the remote control.)

This function is convenient to use when searching for a desired track.
The function will search from the beginning of the track for a loud section, and will play 10 seconds of the track centering around that point.
The order of scanning is the same as for play mode.

1 **Press ID SCAN.**
ID scan will start.

2 [When the desired track has been found]
Press ▶.
The changer will play the track from the beginning.

To cancel ID scan

Press ID SCAN while this function is in operation.
The "ID" indicator will go out.

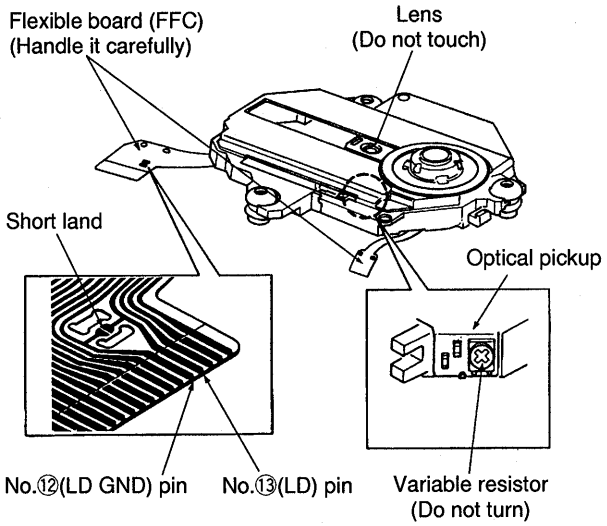
The changer will continue to play from the track being played.

■ Handling Precautions for Traverse Deck

The laser diode in the traverse deck (optical pickup) may break down due to potential difference caused by static electricity of clothes or human body.
So, be careful of electrostatic breakdown during repair of the traverse deck (optical pickup).

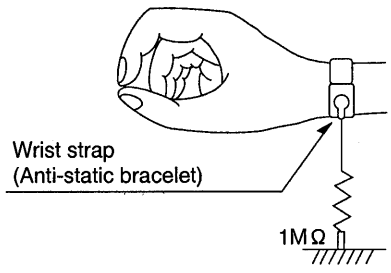
• Handling of traverse deck (optical pickup)

1. Do not subject the traverse deck (optical pickup) to static electricity as it is extremely sensitive to electrical shock.
2. The short land between the No.⑫ (LD GND) and No. ⑬ (LD) pins on the flexible board (FFC) is shorted with a solder build-up to prevent damage to the laser diode.
   To connect to the PC board, be sure to open by removing the solder build-up, and finish the work quickly.
3. Take care not to apply excessive stress to the flexible board (FFC).
4. Do not turn the variable resistor (laser power adjustment). It has already been adjusted.

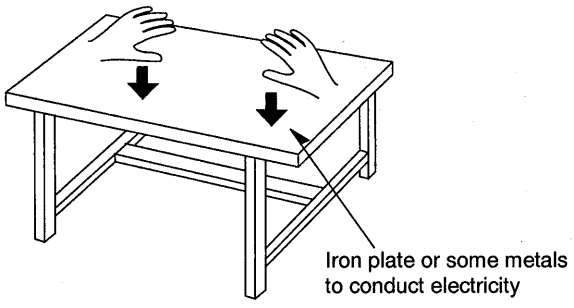


• Grounding for electrostatic breakdown prevention

1. Human body grounding
   Use the anti-static wrist strap to discharge the static electricity from your body.
2. Work table grounding
   Put a conductive material (sheet) or steel sheet on the area where the optical pickup is placed, and ground the sheet.

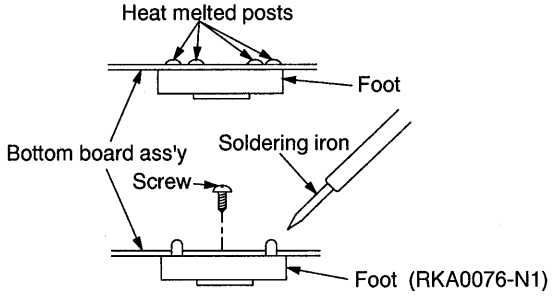


Caution:
The static electricity of your clothes will not be grounded through the wrist strap. So, take care not to let your clothes touch the traverse deck (optical pickup).



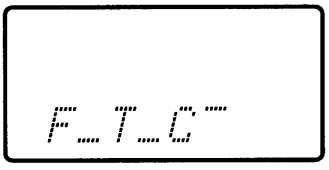
■ REPLACEMENT OF THE FOOT

1. Remove the 4 heat melted posts on the Bottom board ass'y with a pair of nippers or similar tool.
2. To replace the foot (RKA0053-A) on the Bottom board ass'y melt the 4 posts with a soldering iron or install it with a screw (XTB3+6J).



■ Self-Diagnosis Mode

Self-diagnosis mode list

Mode	Procedure	Content	Use	Page
FL display mode	Turn ON power button with no disc loaded. ↓ Press the following 3 buttons simultaneously: PLAY(►),STOP(■),TRACK SKIP(⏮) ↓ FL all unlit ↓ Press DISC button ↓ Press specified button ↓ FL all lit	FL all unlit / all lit	Enables checking of whether FL and each SW are okay or not, before set disassembly.	P11
Mechanical mode	Turn ON power button with no disc loaded. ↓ Hold down the STOP (■) button for at least 2 seconds. ↓ Simultaneously press the TRACK SKIP (⏭) button for at least 2 seconds,while holding down the STOP (■) button. ↓ C (Appears on display)	Displays defective points while performing a series of mechanism operations. C F-15: PU rest SW etc. C F-27: Slide drive system C F-28/ C F-29: Loading system F26: Main IC defect (Automatically displayed when power is turned ON, regardless of mode setting.)	Enables fault to be diagnosed, before set disassembly.	P12 ~ P14
Test mode	Turn OFF power button once, with no disc loaded. ↓ Turn ON power while simultaneously holding down the following button: PLAY(►), STOP(■) ↓ TEST MODE (Appears on display) → Press **A** button → Press **B** button Mount disc in single (slot 0) position. → Press **C** button	**A** button: Results in independent operation of traverse deck.	Use to check correct operation after disassembly.	P15
		B button: Repeats loading / unloading operation.	Use to check correct operation after repair.	P16
		C button: Automatically repeats loading / unloading / slide operation.		P17
Servo adjustment mode	After mounting disc in slot, turn OFF power button once. ↓ Turn ON power while simultaneously pressing the following three buttons: PLAY(►),PAUSE(❚❚),STOP(■) ↓ Press the PLAY(►) button.	Displays servo circuit status on FL. 	Enables checking of servo status. * F = Focus servo * T = Tracking servo * C = CLV servo	P18 • P19

Before set disassembly

Before set disassembly, perform Self-diagnosis (FL display mode and Mechanical mode) and CD basic operation checking, and develope an idea of the cause of the problem.

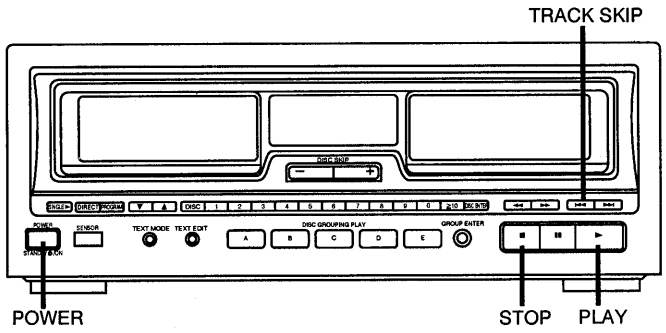
Self-diagnosis FL display mode

FL all unlit test

Press POWER with no disc loaded.

Press STOP(■),PLAY(▶),TRACK SKIP(◀◀) simultaneously.

FL is all unlit.

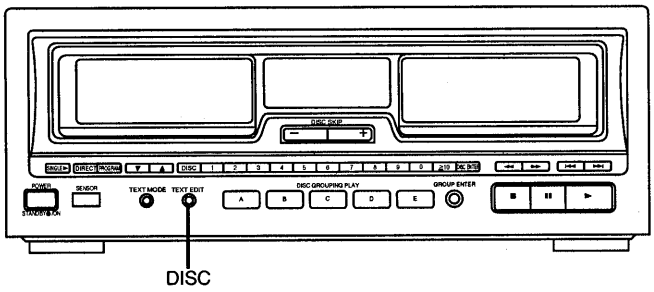


Previous display remains unchanged:
* Check switches(■ , ▶, ◀◀).
Characters remain displayed:
* Check the grid of the characters.

FL all lit test

Press DISC (FL remains all unlit)

Press all buttons except STOP(■), PAUSE(▮▮), PLAY(▶), SEARCH(◀◀, ▶▶), DISC, DISC ENTER and POWER.



Result	Handling
All lit	Normal (Pressed button and FL normal)
All remain unlit	Check all buttons pressed above
Missing letters	Check grid of missing letters

Cancellation

- Press STOP(■) or turn OFF/ON power button.

Self-diagnosis Mechanical mode

Setting

Turn ON the power button with no disc loaded.

↓

Loading unit moves to the right and left, and system reverts to standby mode.

↓

Hold down the STOP(■) button for at least 2 seconds.

↓

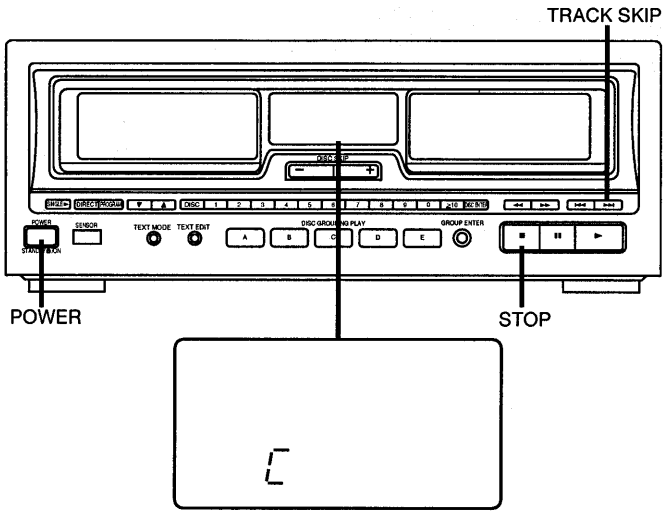
Simultaneously press the TRACK SKIP(▶▶|) button for at least 2 seconds, while holding down the STOP(■) button.

↓

"C" appears on display

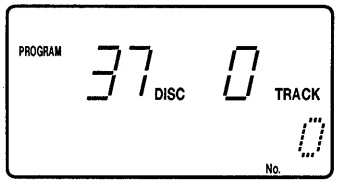
↓

Self-diagnosis starts automatically



Loading unit operation and display

		(Display)
OPU moves to rest position. YES / NO	Stops	C F-15
Moves to transport lock position. YES / NO	Stops	C F-27
Disc detection (Round trip, moving right to left) YES / NO	Stops	C F-27
Stop for 1 second at standby position. YES / NO	Stops	C F-27
Moves to slot No.15, loading operation. YES / NO	Stops	C F-27 or C F-28
Stop for 1 second in clamp state. YES / NO	Stops	C F-28
Unloading operation YES / NO	Stops	C F-29
Moves to transport lock position YES / NO	Stops	C F-27
Moves to standby position YES / NO	Stops	C F-27
Complete = Normal		



Cancellation

- Turn power button OFF/ON.

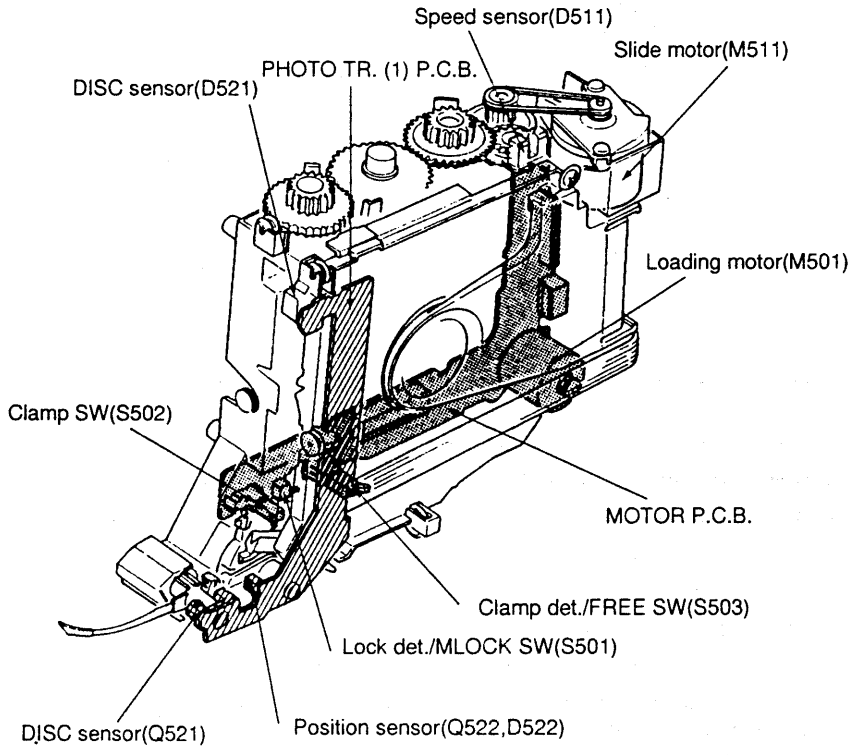
Self-diagnosis Mechanical mode

Display and handling

Display	Cause	Handling
F-15	The sympton is slow start-up of the CD when power is turned ON. The cause is defective contact of the OPU rest switch.	Abnormal rest detection switch (S701).
F-26 (Automatic display)	Sympton is that the unit does not operate when the play button is pressed, or the CD is skipping etc. The probable cause is defective system control IC. Lock det./MLOCK SW (S501) does not go ON/OFF in initial operation.	* Check system control (IC401) and servo IC (IC702). * Check each IC and the servo circuit. * Check Lock det./MLOCK SW (S501).
F-27	Sensor abnormal. Load on slide drive system is too great. Loading unit does not move to the right and left. Slide motor malfunction.	* Check slide motor (M511). * Check position sensor (Q522, D522) and speed sensor (D511). * Check gears of slide drive system. (Jammed by foreign matter or great teeth missing.)
F-28	Clamp det./FREE SW does not go OFF, and Clamp det.SW (S502) does not go ON within 5 seconds during loading.	* Check Clamp det./FREE SW (S503) and Clamp SW (S502). * Check loading motor (M501). * Check loading drive system. (Riding-up, shifting or foreign matter jamming of levers, missing gear teeth etc.)
F-29	Clamp det./FREE SW (S503) and clamp SW do not go ON within 5 seconds during unloading.	

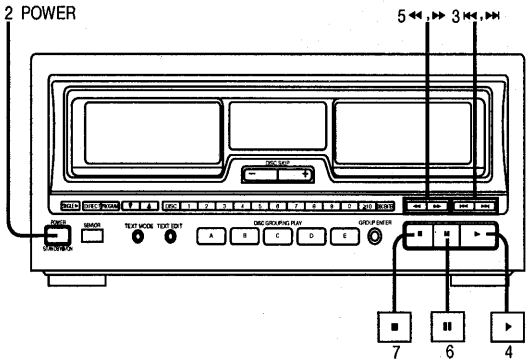
<Method for returning from error display to normal display>

* C F-26: When repair is complete, the error display disappears automatically.
* C F-15/ 27/ 28/ 29: Power SW ON/ OFF.



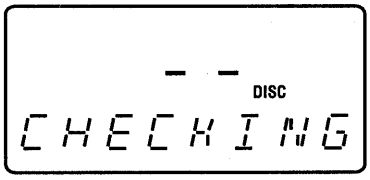
Ref. No.	Part name (Part number)
IC401	System control IC (UPD78043F019)
IC702	Servo processor IC (MN662740RM1)
S501	Lock det./MLOCK SW (RSP1A017-A)
S502	Clamp det. SW (RSH1A005)
S503	Clamp det./FREE SW (RSH1A005)
S701	Rest detection SW (RSM0006-P)
Q521	Disc sensor (PT4810F)
Q522	Position sensor (PT480F)
D511	Speed sensor (RSQGP1S53V)
D521	Disc sensor (LN66S)
D522	Position sensor (GL480V)
M501	Loading motor (RFKPLMC50PAK)
M511	Slide motor (RFKPLMC50PBK)

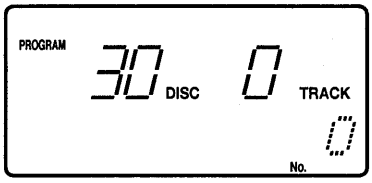
Check of basic CD operation



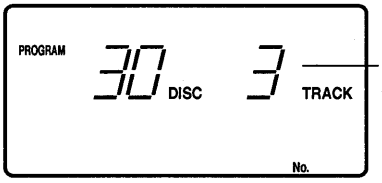
1 [With power supply OFF]
Place one disc in stocker. For example, place a disc in slot No.30.

2 POWER
Press power
[CHECKING DISCS] scrolls across the display, and the number of the slot containing the disc is displayed.



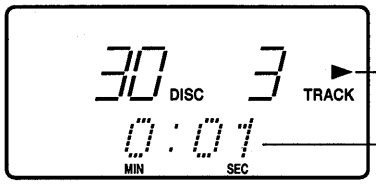


3 ◄◄ ►►
Press either (◄◄ or ►►) until you reach the desired track.
◄◄ : You can skip backward.
►► : You can skip forward.



Track number at the playing position.

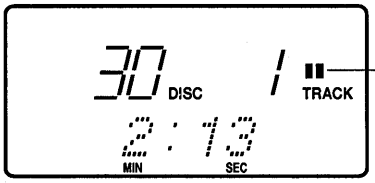
4 ►
Press PLAY (►).



Play indicator
Elapsed play time

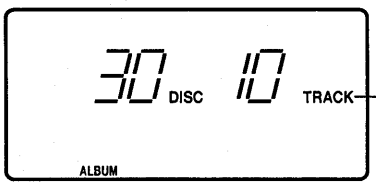
5 ◄◄ ►►
[In the play or pause mode]
Press and hold ◄◄ or ►►
◄◄ : you can search backward.
►► : You can search forward.

6 ▮▮
Press PAUSE (▮▮).



Illuminates

7 ■
Press STOP (■).



Total number of t

Result	Handling
No abnormalities in any operation	In accordance with the buttons operated in Self-diagnosis: FL display mode , all operation buttons (32 buttons) except the DISC ENTER button are normal. Perform PROGRAM and other operation.
Fails to play or play performance is poor.	Perform servo adjustment mode (p18, 19).
Failure of operation other than play. (Example) Does not skip tracks.	Check between button which does not work and servo module. Check for FFC catching of the OPU. Check for bending of the traverse deck worm gear.

Self-diagnosis Test mode A

Setting

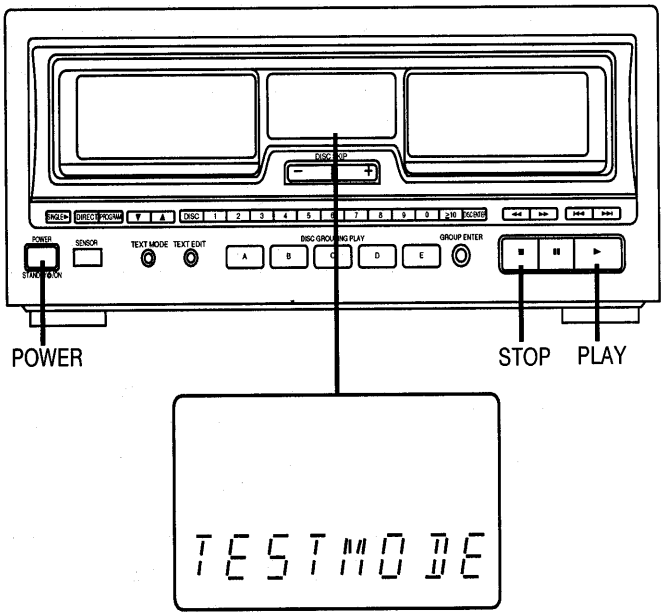
Turn OFF power button with no disc loaded.

↓

Turn ON power button while simultaneously pressing PLAY(►) button and STOP (■) button.

↓

"TEST MODE" appears on the display.

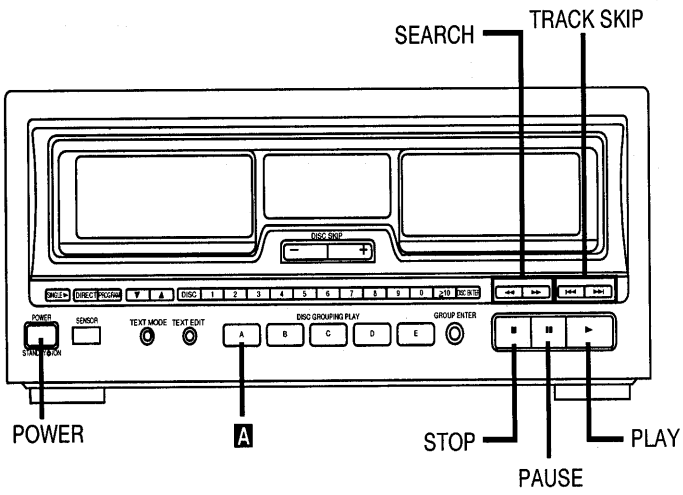


To independently operate the traverse deck,

Press the A button on the operation panel.

↓

The following buttons now work: PLAY (►), PAUSE (❚❚), STOP (■), SEARCH (◄◄ , ►►) and TRACK SKIP (I◄◄ , ►►I).



Cancellation

Turn the power button OFF/ON

Self-diagnosis Test mode B

To perform load and unload operations at the loading unit,

"TEST MODE" appears in the display.

Press the button B on the operation panel.

Has the loading unit been removed from the frame?

The slide motor spins for approx. 5 seconds.

Moves to transport lock position.

Moves to standby position.

Moves to slot No.15.

Loading operation

Stops for 1 second

Unloading operation

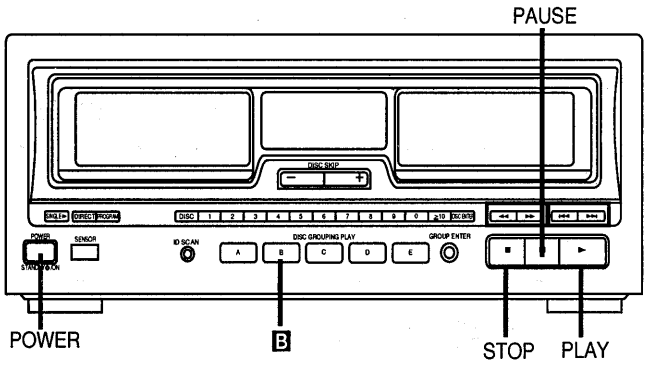
Stops for 1 second

This operation repeats until cancellation.

Setting the "TEST MODE"

Turn OFF power button with no disc loaded.

Turn ON power button while simultaneously pressing PLAY (►) button and STOP (■) button.



Cancellation

Turn the power button OFF/ON

Self-diagnosis Test mode C

To perform linked operation of the loading unit,

Setting the "TEST MODE"

Turn OFF power button with no disc loaded.

↓

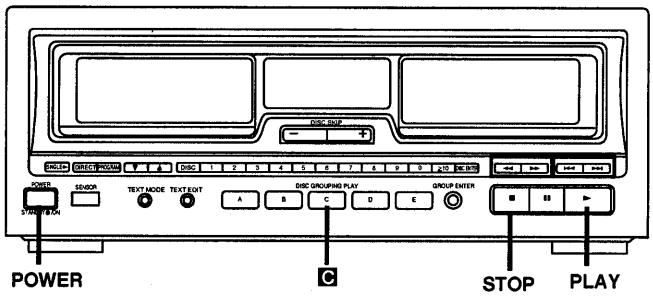
Turn ON power button while simultaneously pressing PLAY (►) button and STOP (■) button.

→ "TEST MODE" appears in the display.

Load disc at single (slot No.0) position.

↓

Press button C on the operation panel.



The follwing automatic operation begins.

↓

Starts the play the disc at slot No. 0 for a second, then stops the play.

↓

Moves one to the right (slot No.1).

↓

Unloads the disc to slot No.1.

↓

Loads the disc and plays for a second and stops.

↓

Moves one to the right (slot No.2)

↓

The same operation as above until slot No.110.

↓

Moves one to the left (slot No.109).

↓

The same operation as above until slot No.0.

Continue

Cancellation

* Turn power button OFF/ON.

Self-diagnosis Servo adjustment mode

This function shows the operating status of the servo system circuits (focus, tracking, CLV) on the FL display.
The results of automatic adjustment of the servo circuit are also displayed, using error codes.

Check when assembled

Load CD into stocker.

Turn OFF the power button.

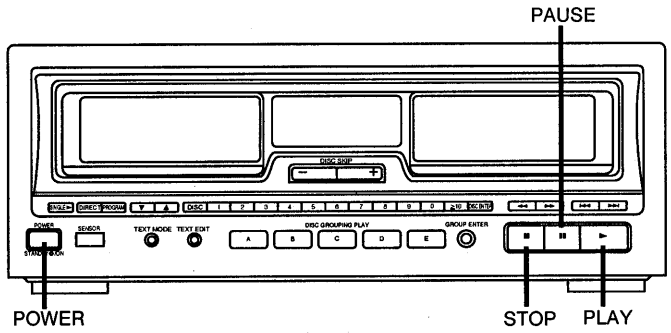
Turn ON the power button while simultaneously pressing STOP (■), PAUSE (▮▮) and PLAY (►).

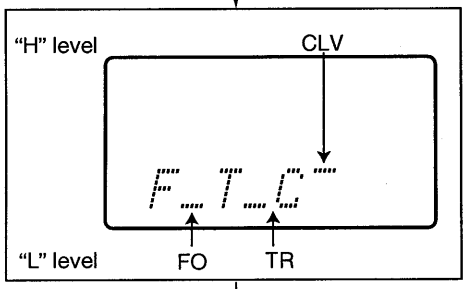
Check while disassembled

Set to S/M state.

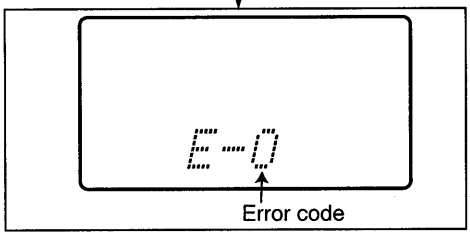
Perform " **To independently operate the traverse deck** " on p.15.

Press PLAY (►), and after playing for 10 seconds, press PAUSE (▮▮).



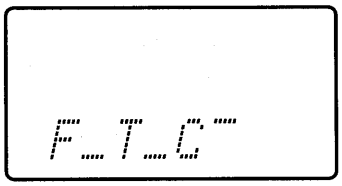


Press STOP (■).



Result	Handling
E - 00	Normal
Other display, (Example) E-1	Refer to p.19 to remedy.

How to read FTC.



= Normal

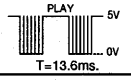
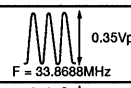
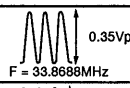
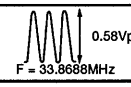
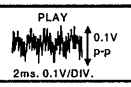
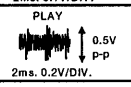
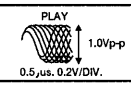
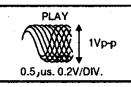
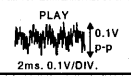
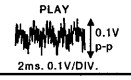
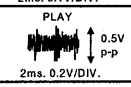
	"H" level	"L" level
F	FO system NG	FO system OK
T	TR system NG	TR system OK
C	CLV system OK	SP mortor NG

FO: Focus
TR: Tracking
CLV: CLV servo

●Error code based on troubleshooting

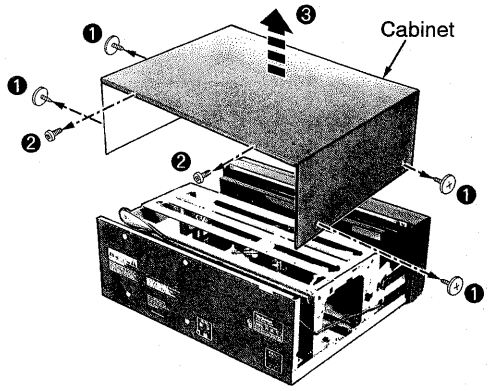
※ The unit is satisfactory if the error code is **E - 0** or **E - 2.**

※ Before testing, check that the test disc is free of scratches and optical pickup is clean.

FL error code display	Symptom	Probable cause	Signal to check		Normal voltage and waveform values	
			Signal name	Location	PLAY	STOP
E - 1	Focus and tracking offset adjustments not completed in the specified time period.	1. Clocks X1 and X2, power supply V_{DD} and reset/RST, all on IC702. 2. MDATA, MCLK, MLD and SENSE signal to/from mechanism controller.	MDATA	IC702 ⑧ pin		0V
			MCLK	IC702 ⑦ pin		4.9V
			MLD	IC702 ⑨ pin		4.9V
			SENSE	IC702 ⑩ pin	—	—
			/RST	IC702 ⑱ pin	4.8V	4.8V
			X1	IC702 ⑱ pin		
			X2	IC702 ⑲ pin		
E - 3 E - 5 E - 7 E - 9 E - B E - D E - F	Disc play unstable.	1. Scratches or contaminants on disc surface. 2. Focus and tracking servo circuits (check waveforms, voltages, and part values.) 3. Spindle driver circuit. 4. Optical pickup.	FE	IC702 ㉜ pin		2.4V
			TE	IC702 ㉝ pin		2.4V
			FOD	IC702 ㉘ pin	2.4V	2.4V
			TRD	IC702 ㉗ pin	2.4V	2.4V
			KICK	IC702 ㉖ pin	2.4V	2.4V
			/FLOCK	IC702 ⑪ pin	—	—
			/RF DET	IC702 ㊳ pin	0V	4.8V
			RF	TJ701		2.4V
			STAT	IC702 ⑰ pin	4.8V	0V
E - 4 E - 6 E - C E - E	Best "Eye" (PD Balance) adjustment not completed in the specified time period.	1. Scratches or contaminants on disc surface. 2. Focus and Tracking servo circuit (check waveforms, voltages, and part values.) 3. Optical pickup.	FBAL	IC702 ㉚ pin	2.4V	2.4V
			RF	TJ701		2.4V
			FE	IC702 ㉜ pin		2.4V
			/TLOCK	IC702 ⑫ pin	—	—
			OFT	IC702 ㊱ pin	0V	0V
E - 8 E - A	Focus or Tracking gain adjustment not completed in the specified time period.	1. Scratches or contaminants on disc surface. 2. Focus and Tracking servo circuit (check waveforms, voltages, and part values.) 3. Optical pickup.	FE	IC702 ㉜ pin		2.4V
			TE	IC702 ㉝ pin		2.4V
			/TLOCK	IC702 ⑫ pin	—	—
			OFT	IC702 ㊱ pin	0V	0V

DISASSEMBLY/OPERATION CHECKS/REASSEMBLY PROCEDURES

■ COMMON • • • • • ITEMS FOR EACH PROCEDURE



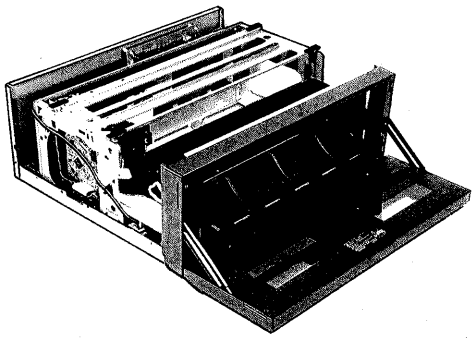
❶, ❷ Remove the 6 screws.

❸ Remove the cabinet.

※ The numbers reversed in white indicate the order of procedures.

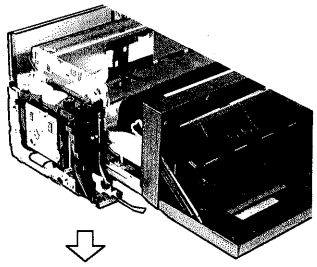
■ PRIOR TO THE OPERATION CHECKS

The following DISASSEMBLY/OPERATION CHECKS/REASSEMBLY procedures consist of 3 main items.
Follow the appropriate procedures to the failed block.



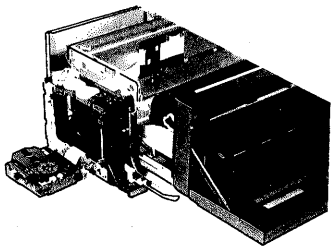
• Each block are described in order to the followings. DISASSEMBLY
➡ OPERATION CHECK
➡ REASSEMBLY

Act.1 ⇨ **Loading unit** (☞Refer to pages 22~29)

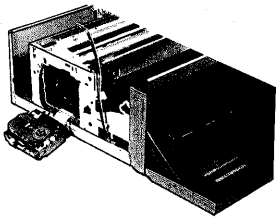


⇩

Traverse deck separation (☞Refer to pages 30~33)



Act.2 ⇨ **Traverse deck** (☞Refer to pages 34~37)



Act.3 ⇨ **Front panel** (☞Refer to page 38)

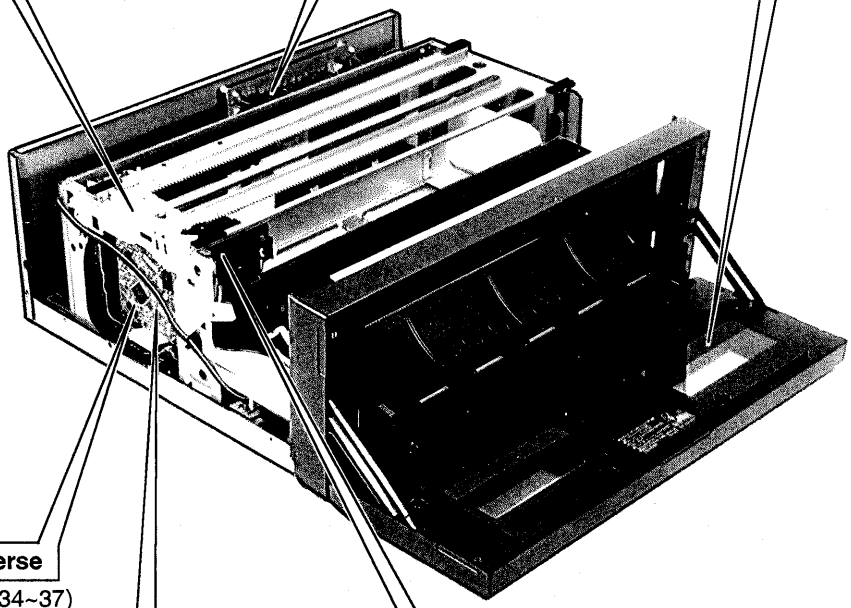
Main P.C.B. (☞Refer to page 39)

■ Repair Guide

Removal for loading unit
(☞Refer to pages 22~29)
⬇
Traverse deck separation
(☞Refer to pages 30~33)

Removal for main P.C.B.
(☞Refer to page 39)

Removal for front panel
(☞Refer to page 38)



Removal for traverse
(☞Refer to pages 34~37)

Servo module diagnosis
- Mechanical mode setting (☞Refer to pages 12~14)
- Servo adjustment mode (☞Refer to pages 18,19)

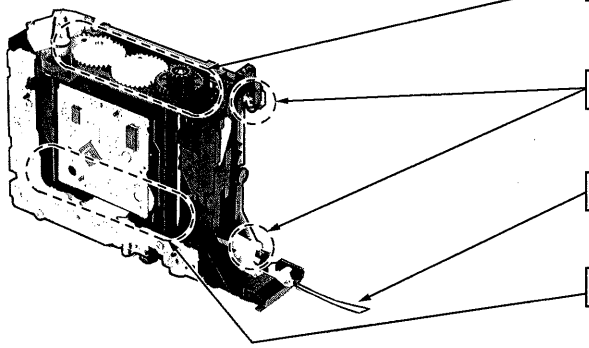
Operation checks for loading
- Mechanical mode setting (☞Refer to pages 12~14)
- Servo adjustment mode (☞Refer to pages 18,19)

Precaution
- Handling of the loading unit (☞Refer to pages 22)

Precaution

■ Handling of the loading unit

• During the loading unit disassembly/operation checks/reassembly, handle the following parts carefully .



Each travel gear

• Check each gear for rotating in assembly.

LED and Photo coupler

• Dust, incorrect position and etc.

Front feed lever

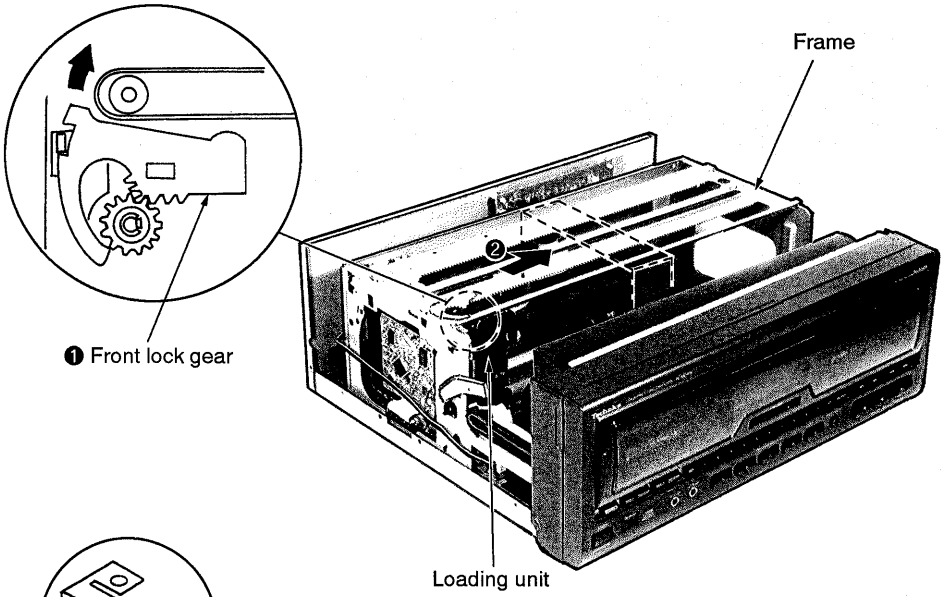
• Broken, deformation and etc.

Each loading gear

• Check each gear for rotating in assembly.

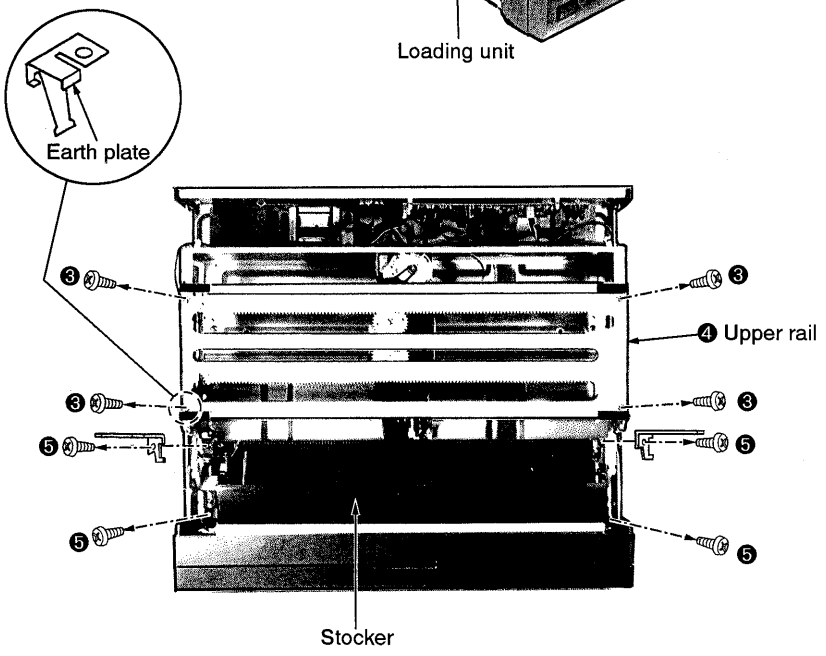
Act.1 Loading unit Disassembly

■ Handling of the loading unit



❶ Unlock the loading unit by moving the front lock gear manually in the direction of arrow.

❷ Move the loading unit manually in the right direction.
(Move the loading unit to the right direction beyond the center of the frame.)



❸ Remove the 4 screws for upper rail.

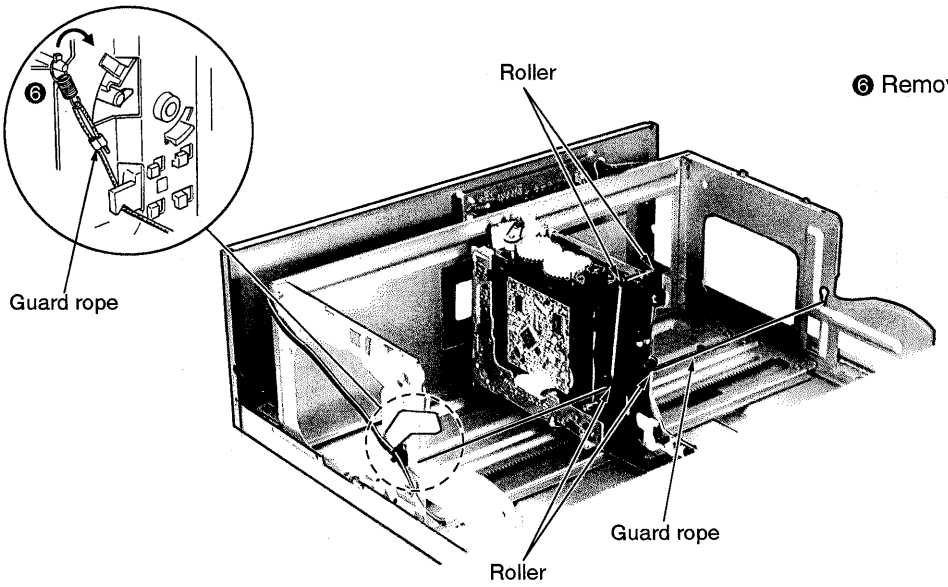
NOTE

When the upper rail is removed, the earth plate will also removed.

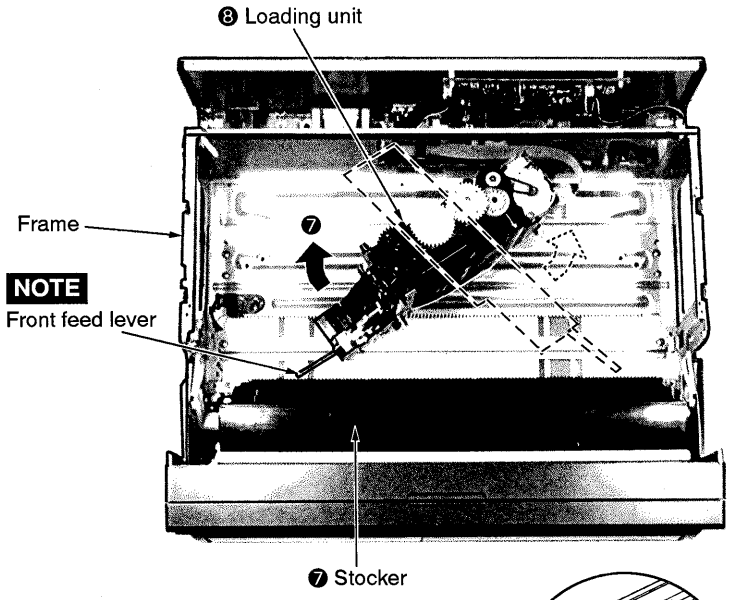
❹ Remove the upper rail.

❺ Remove the 4 screws for stocker.

Act.1 | Loading unit | Disassembly

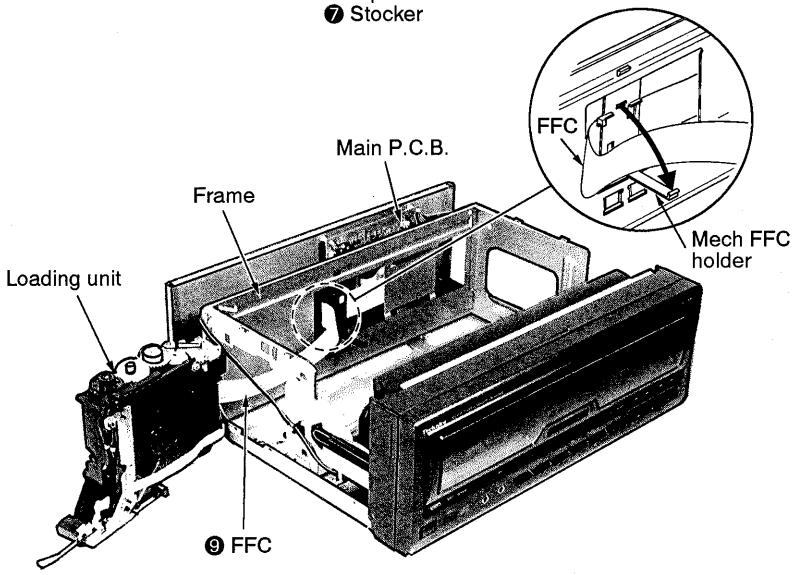


❻ Remove the guard rope.



NOTE
When removing the loading unit, make sure to avoid the front feed lever from the stocker and then, lift up the loading unit because the front feed lever is positioned under stocker.

❼ Rotate the loading unit to clockwise or counterclockwise with lifting the stocker and then,slide the front feed lever under the stocker.
❽ Remove the loading unit from frame.



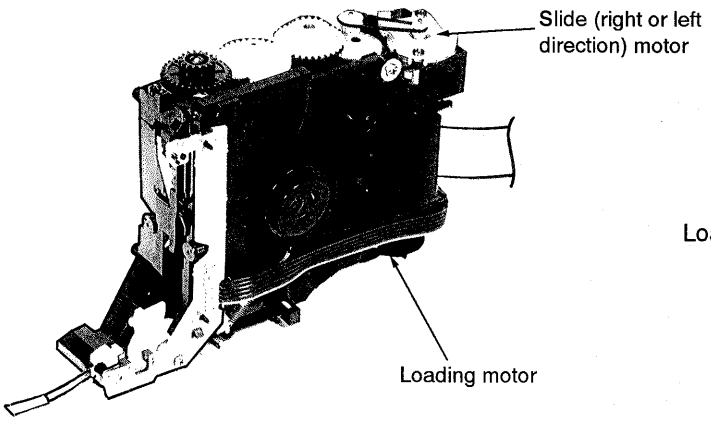
❾ Remove the mech FFC holder.

❿ Remove the FFC from loading unit. Then, reconnect the FFC to the loading unit through the opening of frame.

Preparation for operation checks is completed.

Act.1 | Loading unit | Operation checks

■ Test mode



❶ Set to the test mode and then, push the button B on front panel (☞Refer to page 16)
❷ The slide(right or left direction) motor rotates for approximate 20 seconds.
❸ Then, the loading motor rotates with repeating the following operation.

Load ➡ (Stop for 1 second) ➡ Unload ➡ (Stop for 1 second)

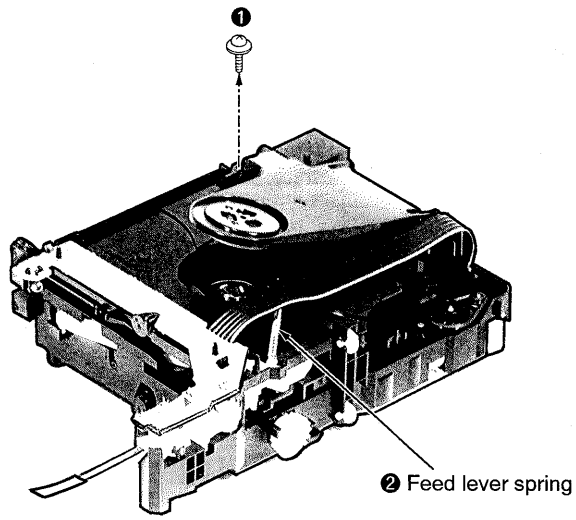
Make sure there are no unusual noise, binding or running over visually.

❹ To relieve the operation, set to the power off.

※ This operation can be executed without traverse deck (including servo module).

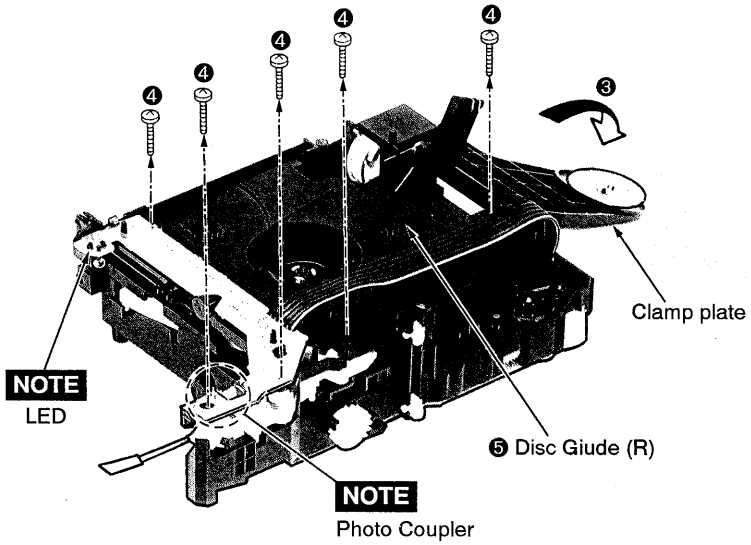
■ Manual operation

(For this operation, remove the parts described in "Test mode", and more the parts as follows.)



❶ Remove the 1 screw.

❷ Remove the feed lever spring.



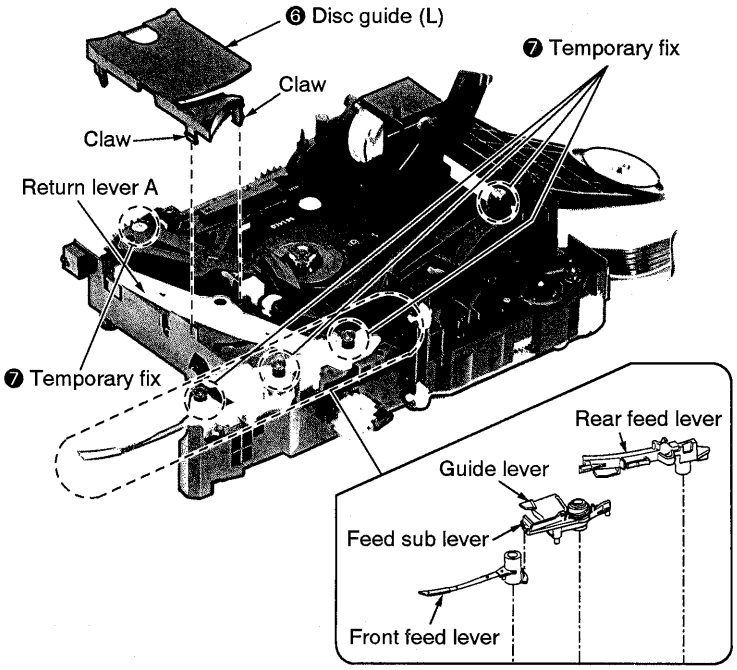
❸ Tilt the clamp plate backward.

❹ Remove the 5 screws.

❺ Remove the disc guide (R).

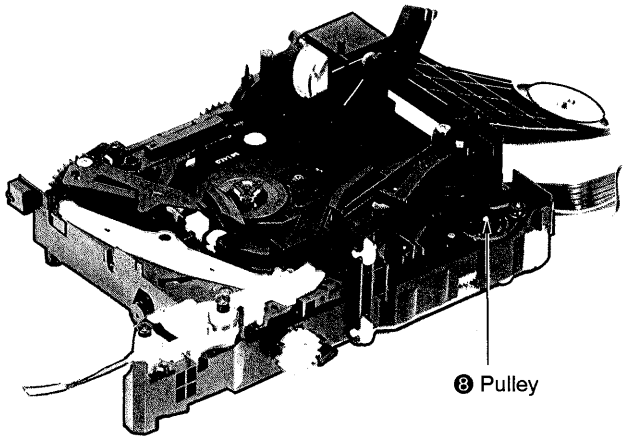
NOTE
Take care not to touch the LED or photo coupler by hand.

Act.1 | Loading unit | Operation checks



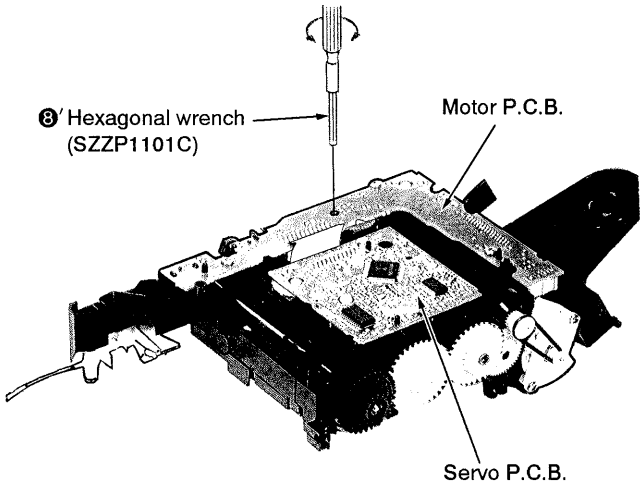
❻ Release the 2 claws and then, remove the disc guide (L).

❼ In this manual operation, the rear/front feed levers, guide lever ass'y, etc. may be removed because the disc guides(L/R) are removed already.
Tempoarary fix those levers with 5 screws.



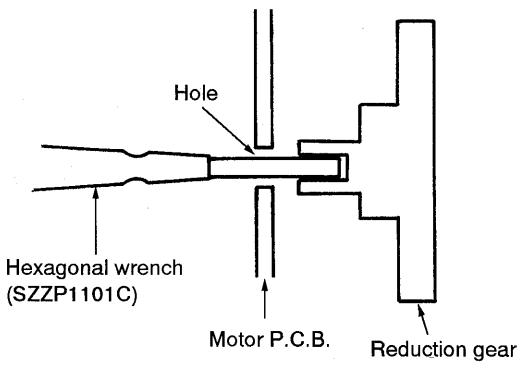
❽ In case of confirmation manually, rotate the pulley as shown left.

- Rotate clockwise : Loading operation
- Rotate counterclockwise : Unloading operation



❽′ Or rotate with 2 mm hexagonal wrench (SZZP1101C).

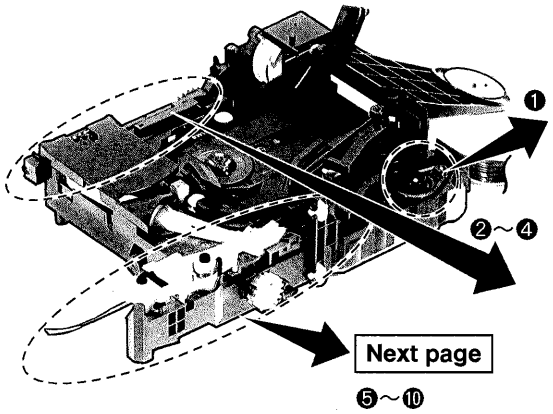
- Rotate clockwise : Unloading operation
- Rotate counterclockwise : Loading operation



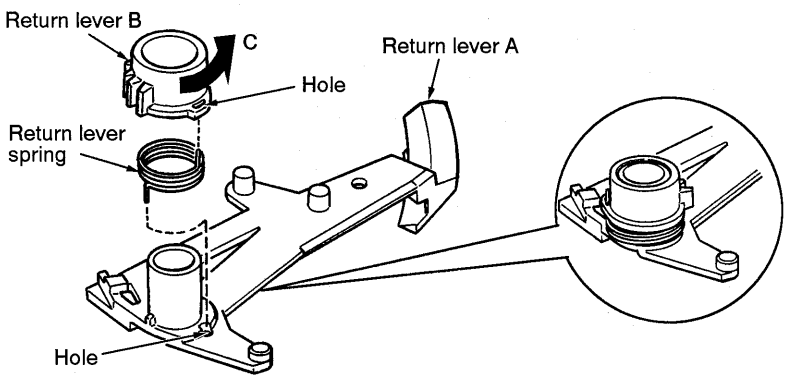
Act.1 | Loading unit | Reassembly

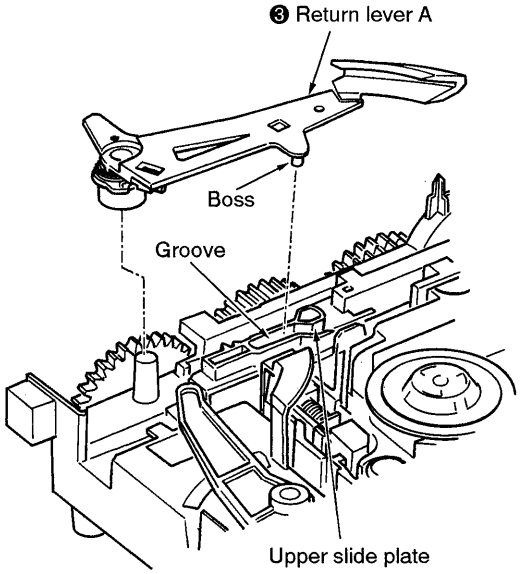
■ In Test mode ····· Follow the items ⑯ ~ ㉒.

■ In Manual operation····· In case that the parts fixed temporary are removed, the perform the items ❶ ~ ⑩ and then, follow the items ⑪ ~ ㉒.



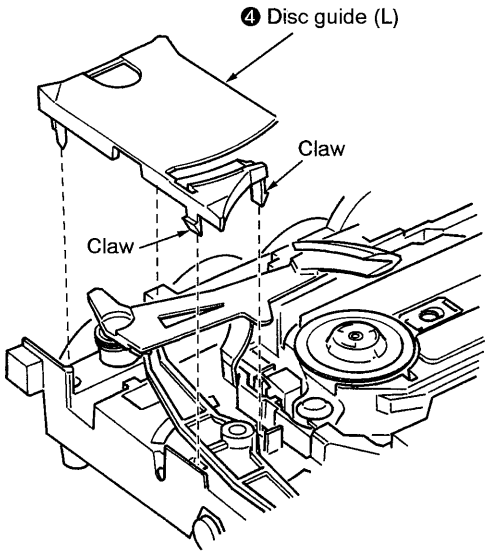
❶ Rotate the pulley clockwise fully.





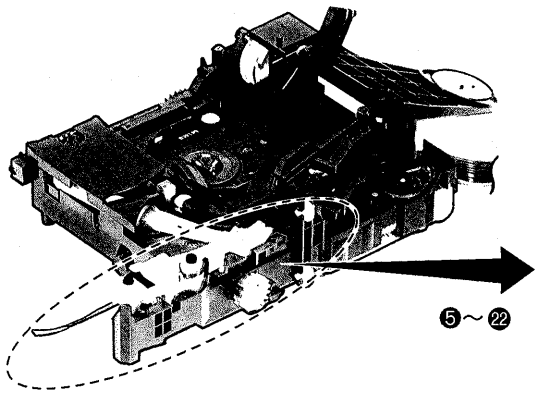
❷ Align the both ends of the spring with the holes of return lever A and B and then, install the return lelver A with rotating the return lever B in the direction of arrow (➡) C.

❸ Install the return lever A.
(Align the boss of return lever A with the groove of upper slide plate.)

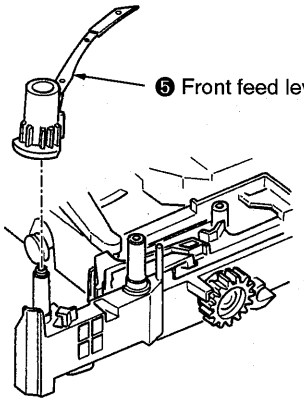


❹ Install the disc guide(L).
(Press the disc guide (L) untill the claws are hooked completely.)

Act.1 | Loading unit | Reassembly

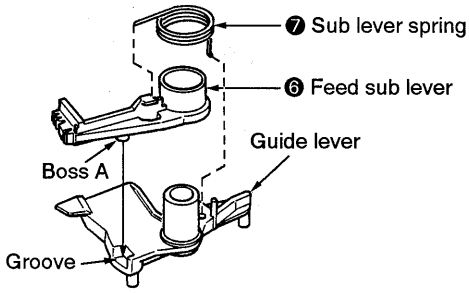


〔The state of pulley rotated clockwise fully.〕



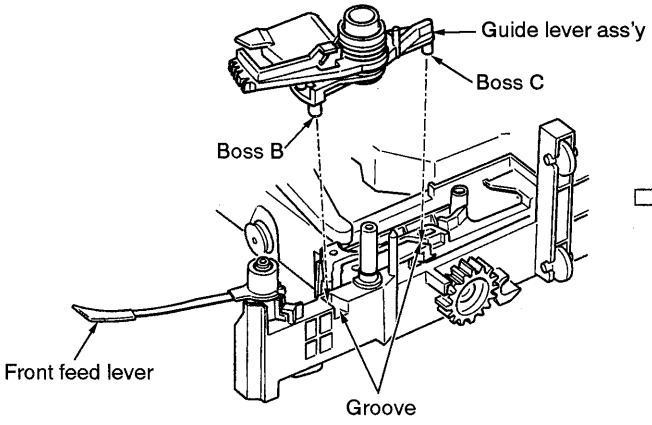
❺ Install the front feed lever.

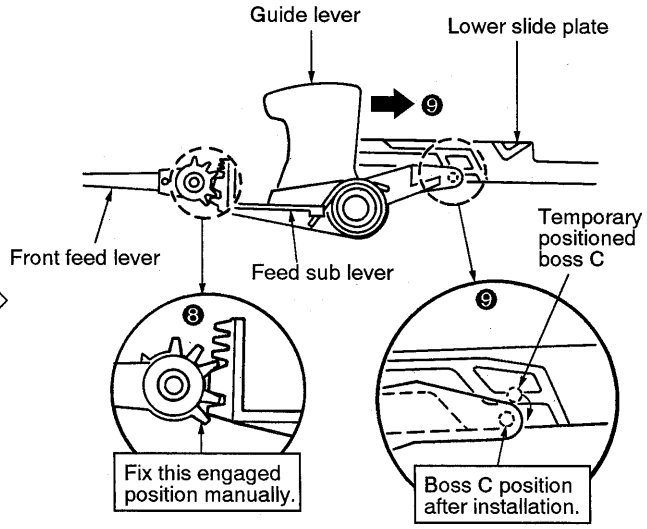
NOTE
Avoid the front feed lever to deform or bend.



❻ Install the feed sub laver to the guide lever.
- Align the boss A of feed sub lever with the groove of the guide lever.

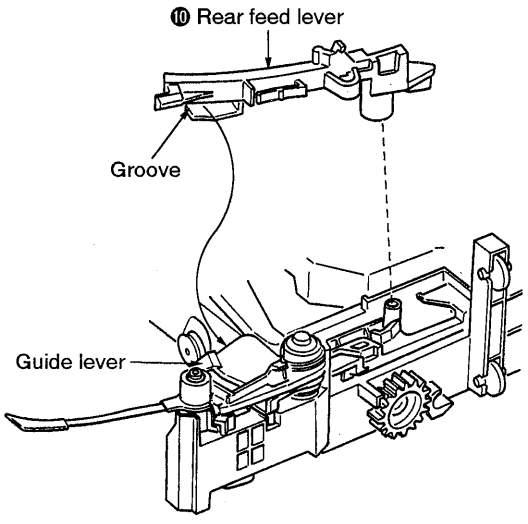
❼ Install the sub lever spring.





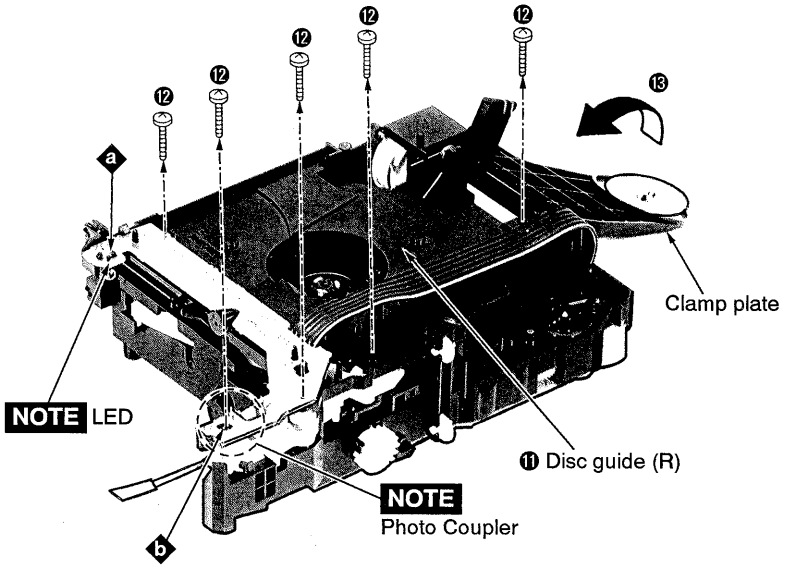
❽ Engage the gear of guide lever ass'y with the gear of front feed lever temporary.
- Boss B must be placed in the groove.
- Boss C must be run over the lower side plate.

❾ With fixing the gear by finger not to slip off the gear clench, rotate the guide lever in the direction of arrow.
- The boss C will fit in the groove.



❿ Install the rear feed lever.
(Align the guide lever with the groove of rear feed lever.)

Act.1 Loading unit Reassembly



⑪ Install the disc guide(R).

NOTE

Align the claw of disc guide with the slot ◆ⓐ.

⑫ Install the 5 screws.

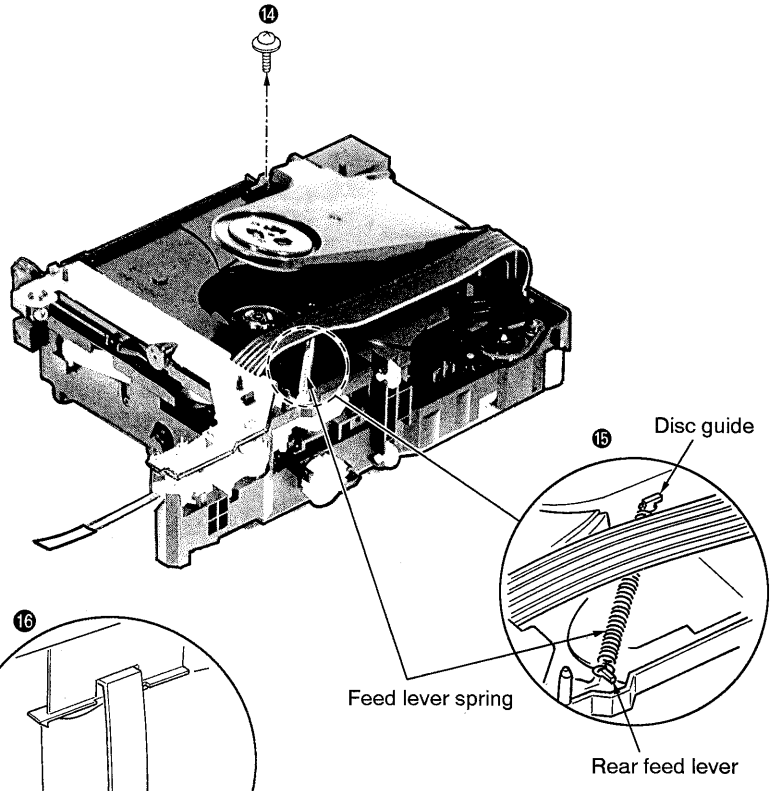
NOTE

Align the upper portion of boss inserted sensor holder with the slot ◆ⓑ, and then tighten screw.

⑬ Tilt the clamp plate forward.

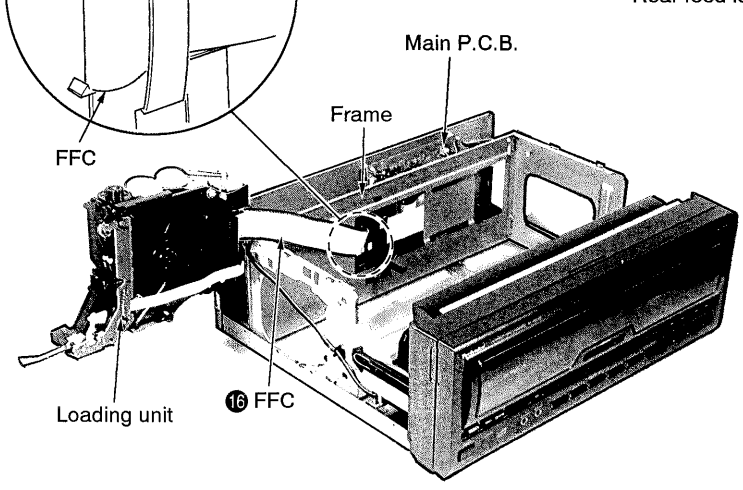
NOTE

Take care not to touch the LED or photo coupler by hand.



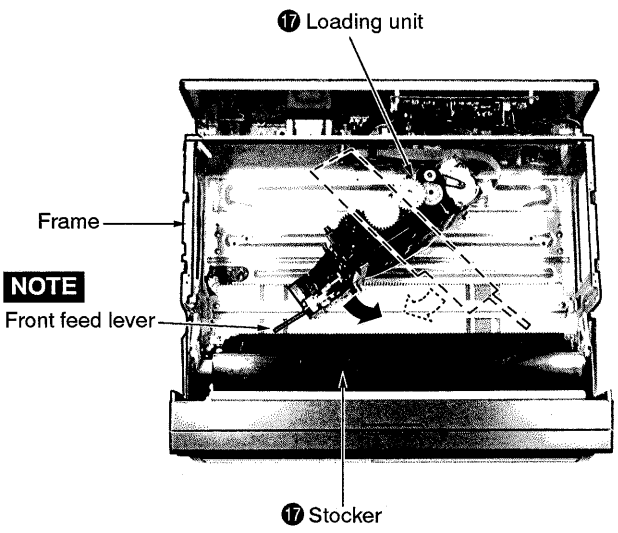
⑭ Install the 1 screw.

⑮ Install the feed lever spring.



⑯ Remove the FFC from loading unit. Then, reconnect the FFC to the loading unit over the frame.

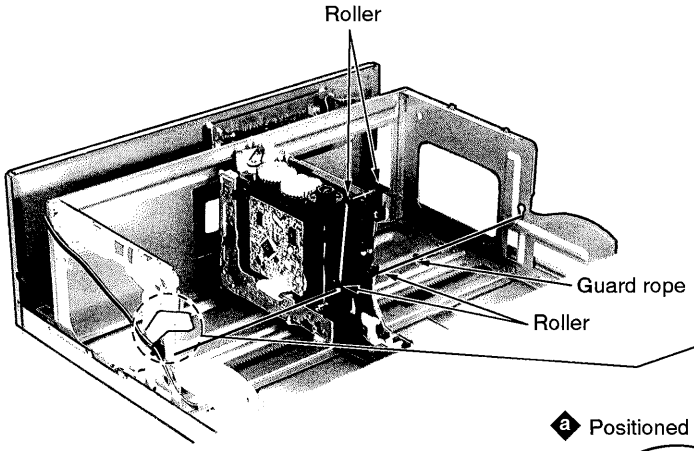
Act.1 | Loading unit | Reassembly



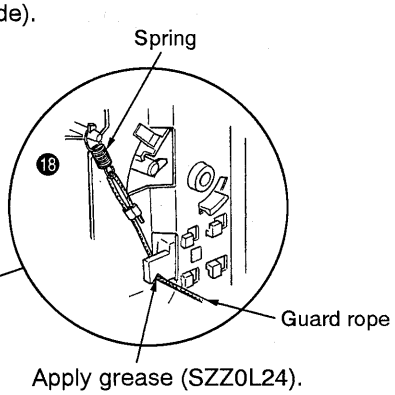
NOTE

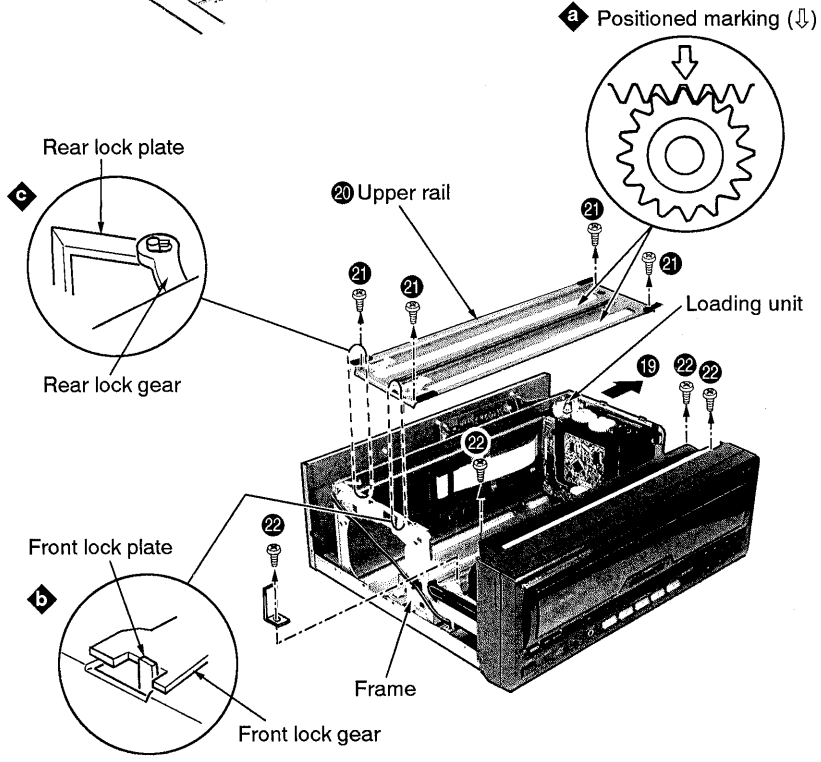
When reassembling the loading unit, make sure to avoid the front feed lever from the stocker and then, install the loading unit because the front feed lever is positioned under stocker.

⓱ Rotate the loading unit counterclockwise or clockwise with lifting the stocker and then, place the front feed lever under the stocker.



⓲ Hang the guard rope with the spring side (left side).





⓳ Move the loading unit to the right end of frame.

⓴ Install the upper rail to the frame. Then, make sure to perform the following operations.

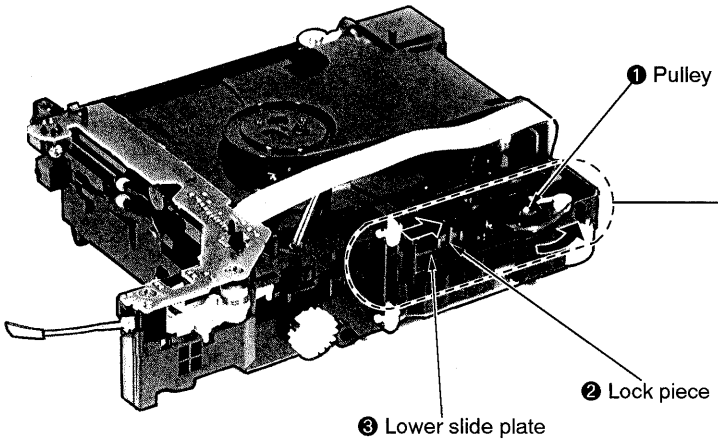
- ⓐ Align the front travel gear and rear travel gear with the marked position of upper rail.
- ⓑ Engage the front lock gear with the front lock plate.
- ⓒ Engage the rear lock gear with the rear lock plate.

㉑ Install the 4 screws for upper rail.

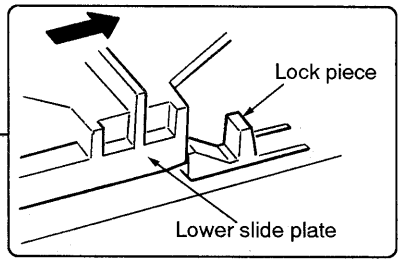
㉒ Install the 4 screws for stocker.

Act.1 Traverse deck separation Disassembly

The followings are described the procedures to make the traverse deck part from loading unit after removed the loading unit block from the frame.

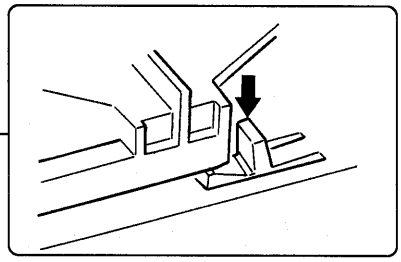


❶ Rotate the pulley counterclockwise.



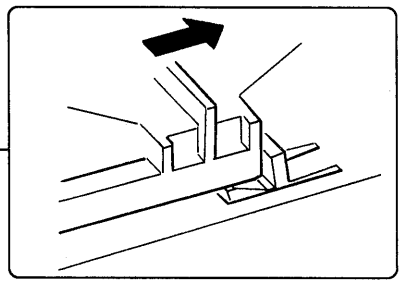
Rotate the pulley until the lower slide plate is moved in the direction of arrow and then touched to the lock piece.

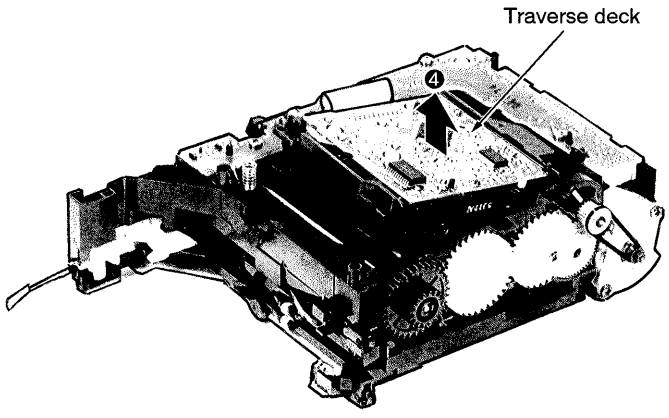
❷ Rotate the pulley counterclockwise fully with pressing the rib of lock piece.



The lower slide plate runs over the lock piece.

❸ Slide the lower slide plate manually in the direction of arrow until the lower slide plate touches the rib of lock piece

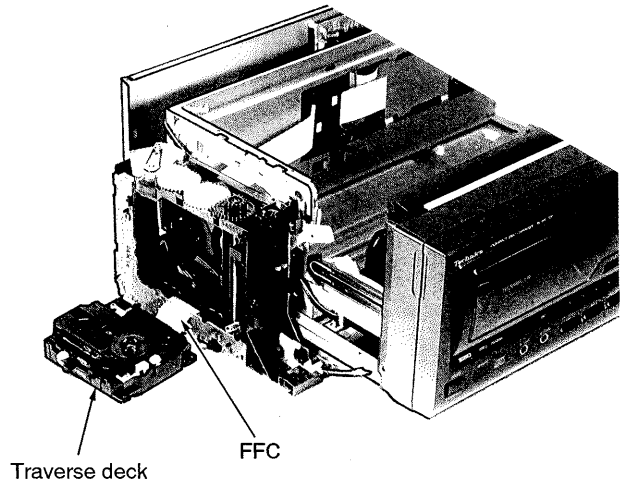




❹ Upset the loading unit and then, lift up the traverse deck.

Act.1 | Traverse deck separation | Operation check

■ Focus operation confirmation



❶ Set the switch to TEST MODE.
(☞Refer to page 15)

❷ Press the button A on the operation panel.

Standby the traverse deck to individual operation.

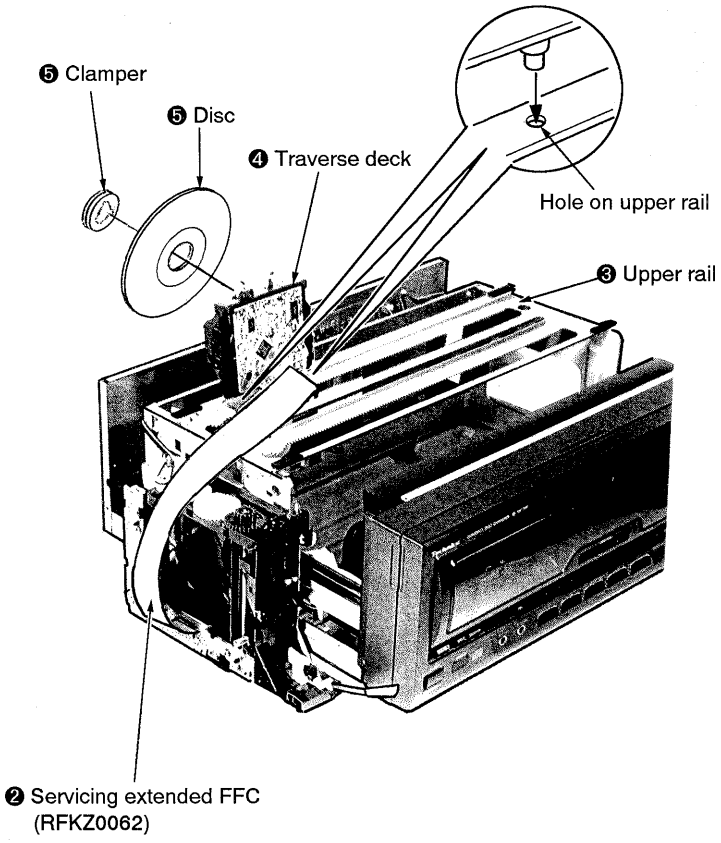
⇩

Press the PLAY(▶)button.

⇩

Confirm the focus operation visually.

■ Servo module confirmation



❶ Remove the FFC between the traverse deck and loading unit.

❷ Connect the servicing extended FFC between the traverse deck and loading unit.

❸ Install the upper rail.
(The screws are not necessary for fixing.)

❹ Locate the servo module faced to you and then, align the traverse deck with the hole on upper rail.

❺ Attach the disc to the clamper with magnet.

⇩

Preparation for operation checks is completed.

❻ Set the switch to TEST MODE.
(☞Refer to page 15)

❼ Press the button A on the operation panel.

⇩

Standby the traverse deck to individual operation.

⇩

Press the PLAY(▶)button.

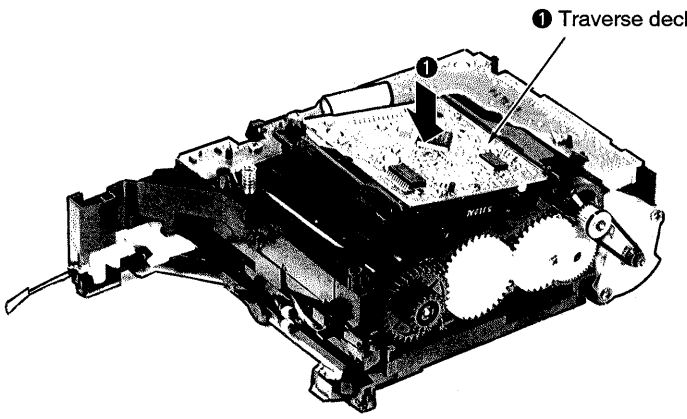
⇩

CD play starts.

⇩

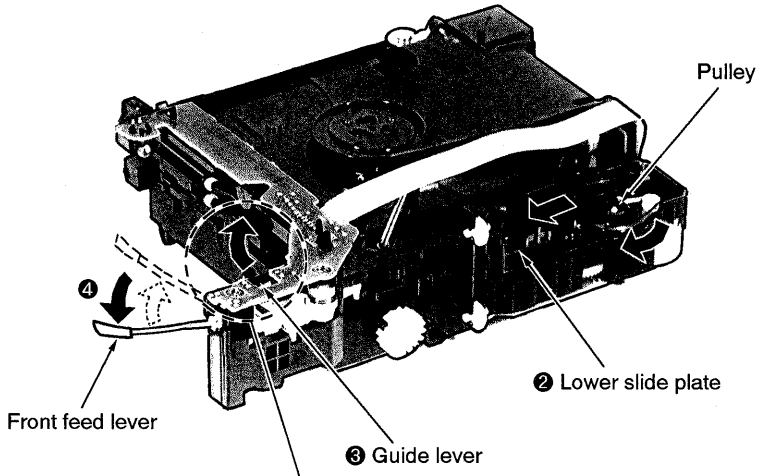
Check the servo module.

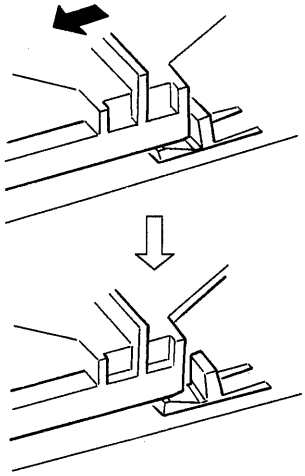
Act.1 | Traverse deck separation | Resassembly



❶ Equip the traverse deck with the loading unit.

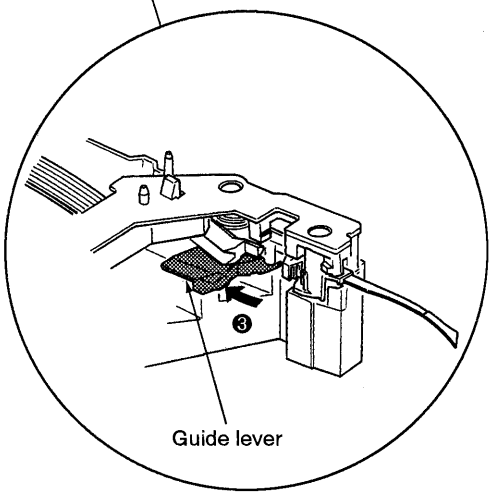
❷ Slide the lower slide plate in the direction of arrow with supporting manually not to be fall free the traverse deck.





The traverse deck will not fall free as shown above.

❸ While pushing the guide lever in the direction of arrow, rotate the pulley clockwise.



To easy installation loading unit into the frame, raotate the pulley fully clockwise.

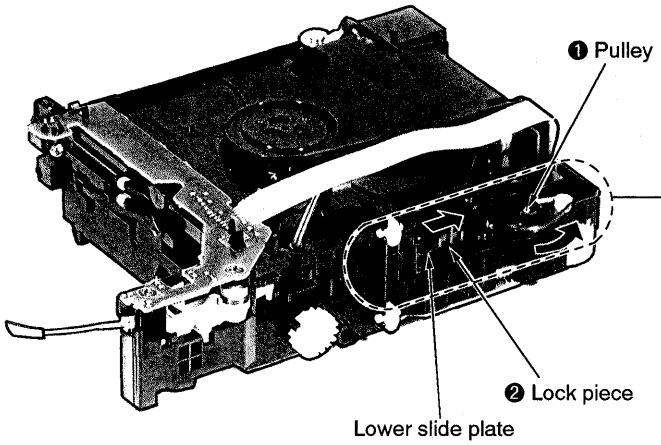
Confirmation

During the above operation , make sure that the front feed lever rotates to clockwise (Dot line) once and then, return to original position(Full line).

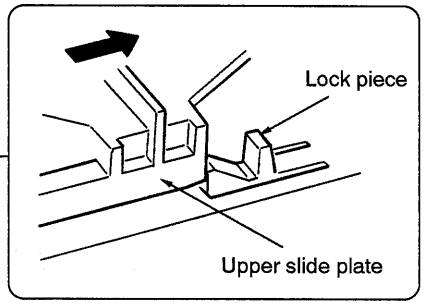
Act.1 | Traverse deck separation | Reassembly

■ In case that the operations described in item "Confirmation" are not to be performed.

- In case that the operations described in item "confirmation" are not to be performed (The front feed lever will not return to original position (Full line) and is fixed at position indicated with dot line), perform the following operations.

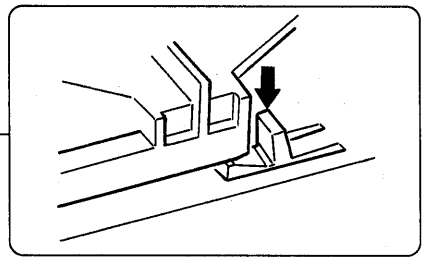


❶ Rotate the pulley counterclockwise.

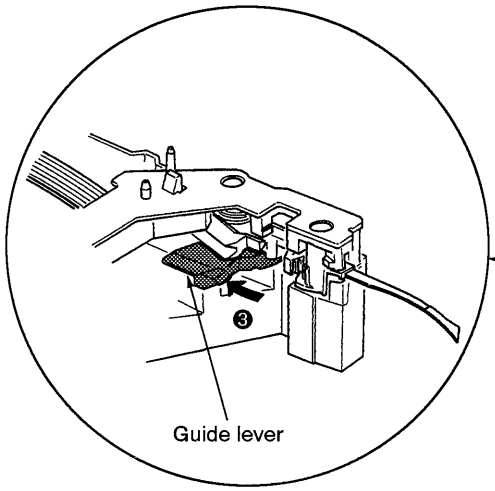


Rotate the pulley until the lower slide plate moves in the direction of arrow and touches the lock piece.

❷ With pushing the rib of lock piece, rotate the pulley counterclockwise fully.



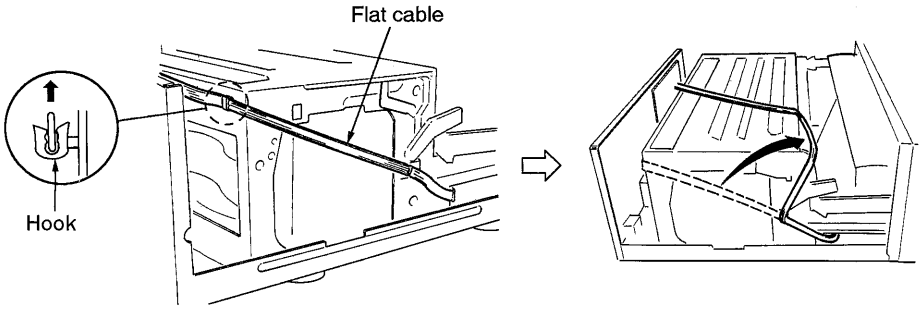
The lower slide plate runs over the lock piece.



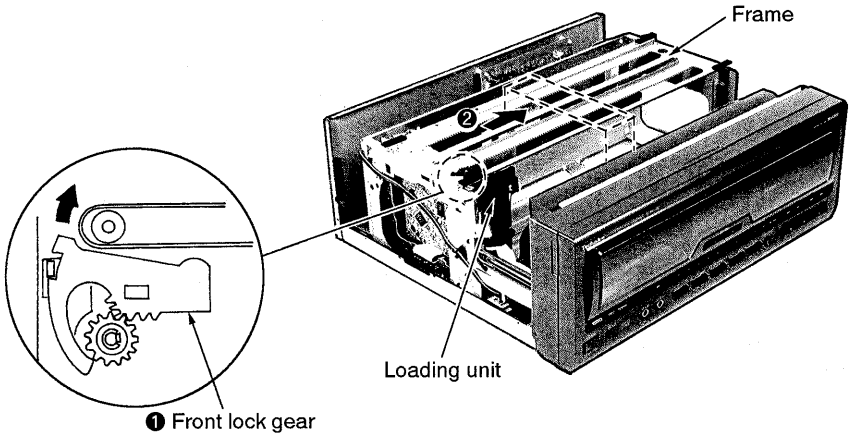
Rotate the pulley counterclockwise with pushing the guide lever as shown item ❸ on page.

Act.2 | Independent traverse deck | Disassembly

- The traverse deck can be removed individually without removal of loading unit.
- It is very convenient to perform the operation checks for traverse deck quickly.

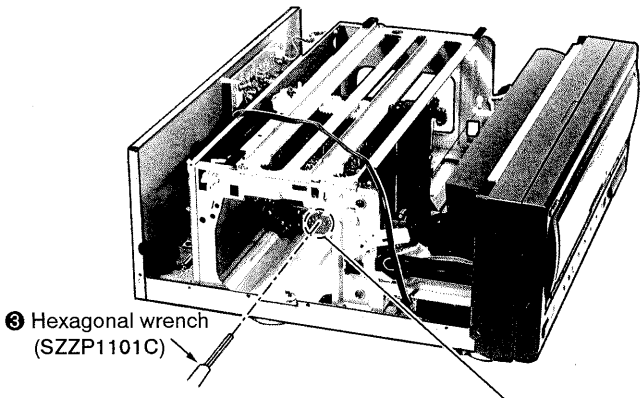


※ Release the flat cable from the hook and then, arrange it as shown right.

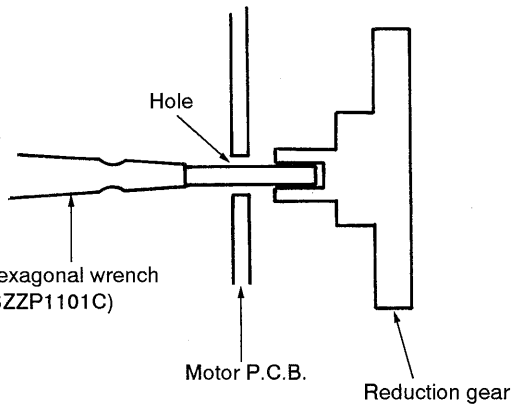


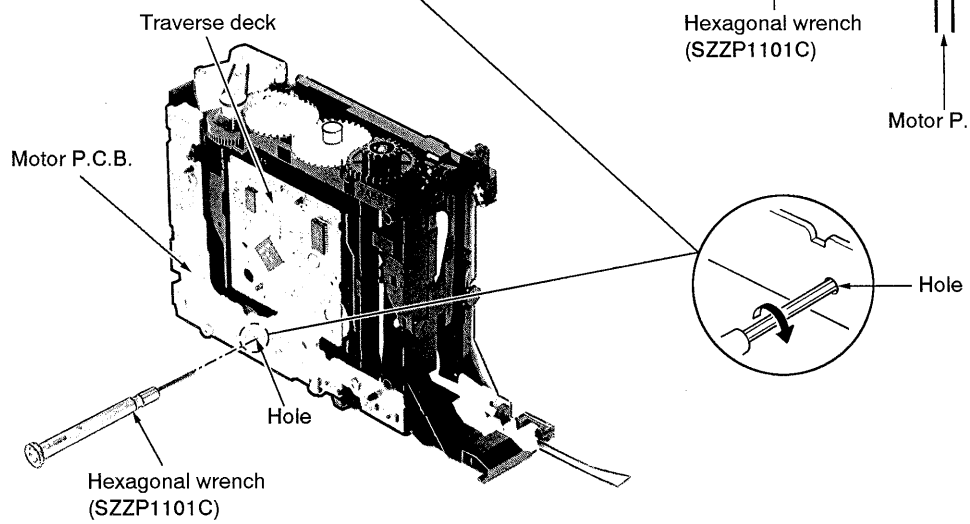
❶ Move the front lock gear manually in the direction of arrow and then, unlock the loading unit.

❷ Move the loading unit to the right end manually.
(Move the unit to the right direction beyond the center of the frame.)

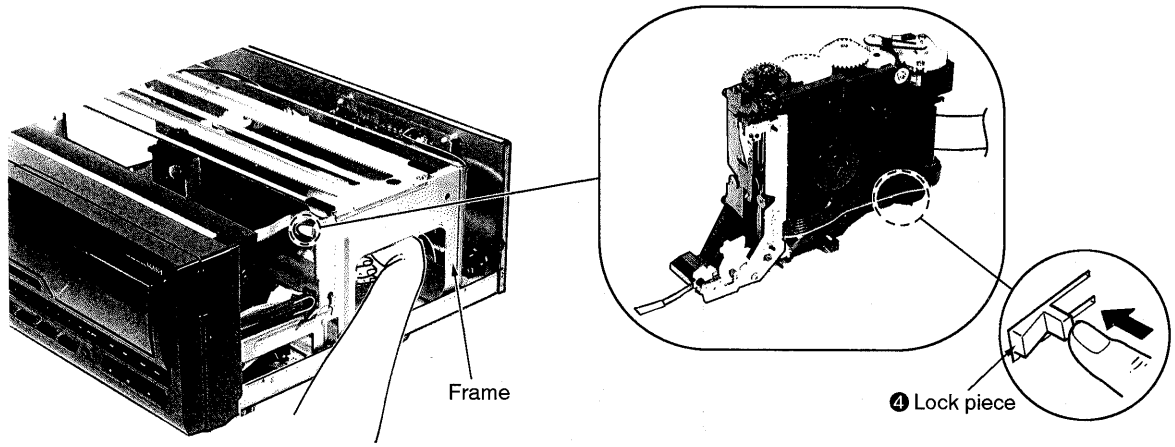


❸ Rotate the reduction gear B clockwise with 2mm type hexagonal wrench (SZZP1101C).



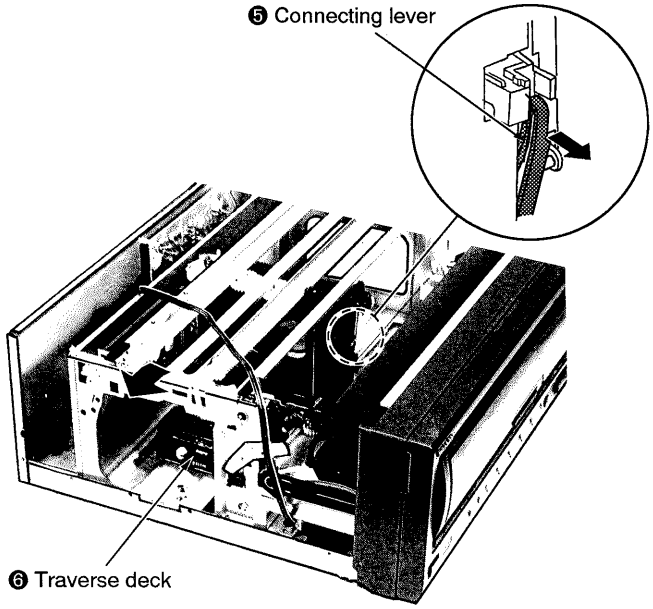


Act.2 | Independent traverse deck | Disassembly



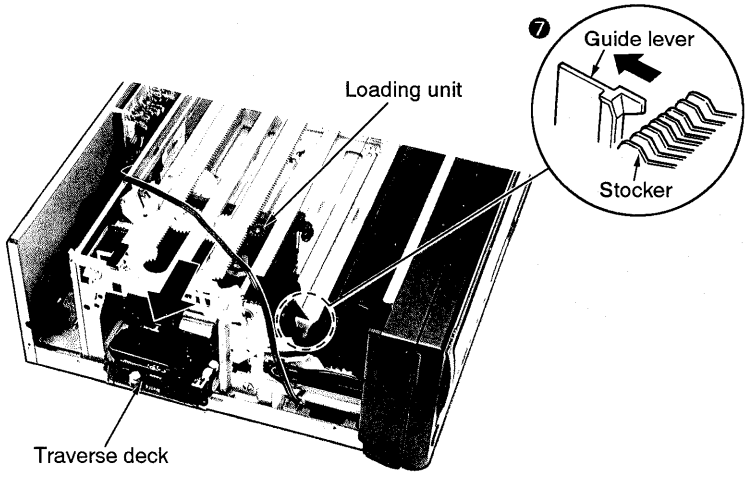
NOTE
Handle the edge of frame with care.

❹ Put the right hand into the right side of frame and then, pressing the lock piece, rotate the hexagonal wrench to clockwise.



❺ Pull the connecting lever in the direction of arrow.

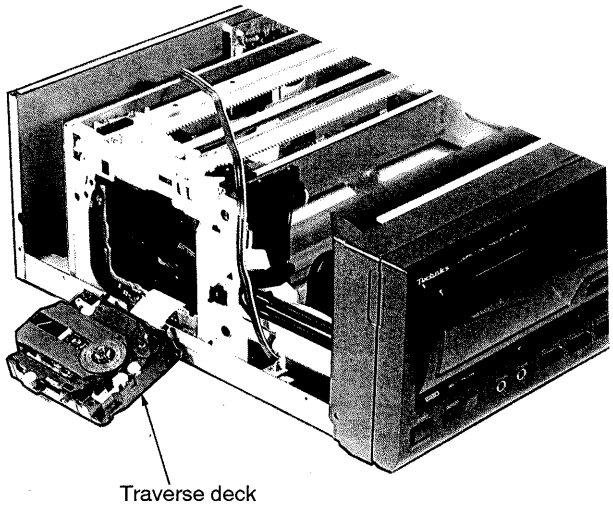
❻ Separate the traverse deck from the loading unit.



❼ Move the guide lever in the direction of arrow and then, move the loading unit to the left end with relieving the engagement to stocker.

Act.2 | Independent traverse deck | Operation checks

■ Focus operation confirmation



❶ Set the switch to TEST MODE.
(☞Refer to page 15)

❷ Press the button A on the operation panel.

⇩

Standby the traverse deck to individual operation.

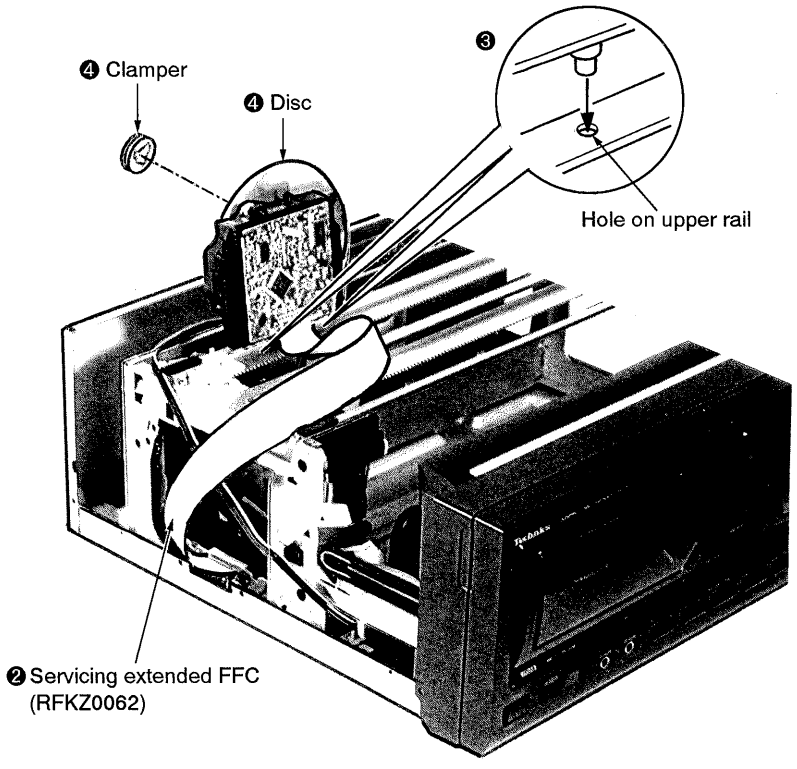
⇩

Press the PLAY(▶)button.

⇩

Confirm the focus operation visually.

■ Servo module confirmation



❶ Remove the FFC between the traverse deck and loading unit.

❷ Connect the servicing extended FFC between the traverse deck and loading unit.

❸ Locate the servo module faced to you and then, align the traverse deck with the hole on upper rail.

❹ Attach the disc to the turn table with clamper (magnet).

⇩

Preparation for operation checks is completed.

❺ Set the switch to TEST MODE.
(☞Refer to page 15)

❻ Press the button A on the operation panel.

⇩

Standby the traverse deck to individual operation.

⇩

Press the PLAY(▶)button.

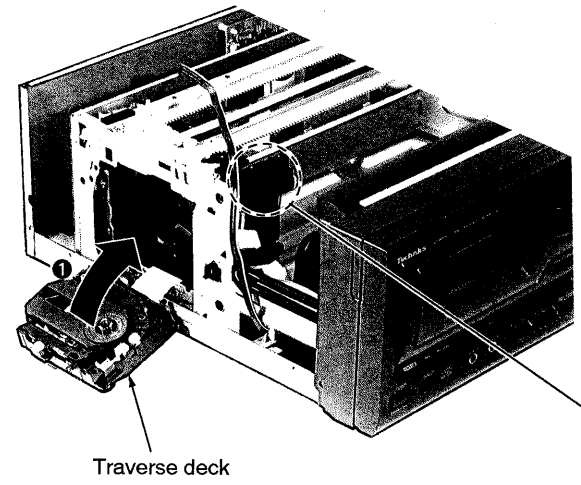
⇩

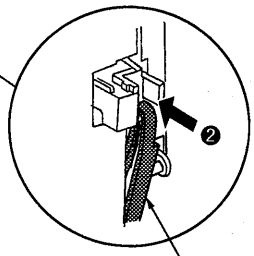
CD play starts.

⇩

Check the servo module.

Act.2 | Independent traverse deck | Reassembly

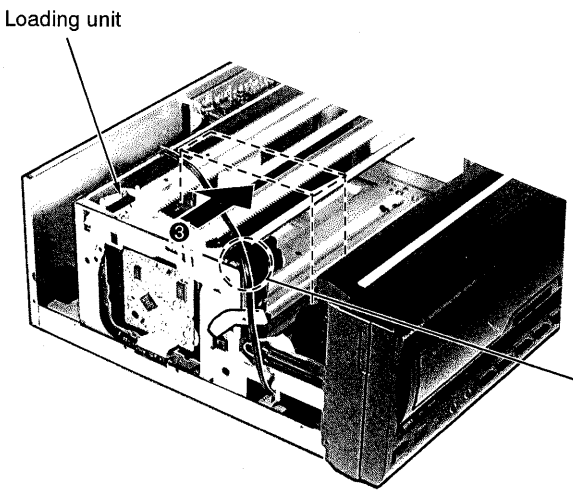


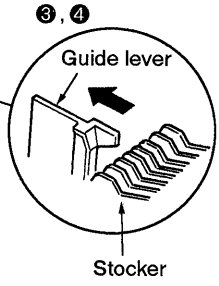


❶ Equip the traverse deck with the loading unit.

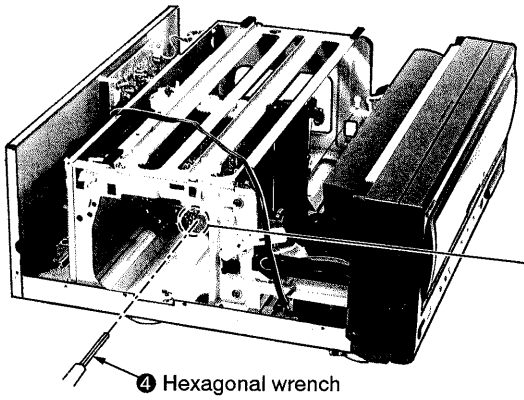
❷ Push the guide lever in the direction of arrow with supporting manually not to be fall free the traverse deck.

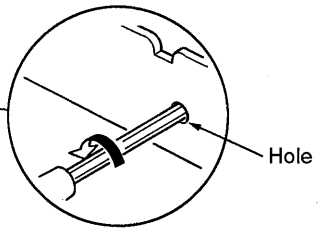
The traverse deck will not fall free as shown above.



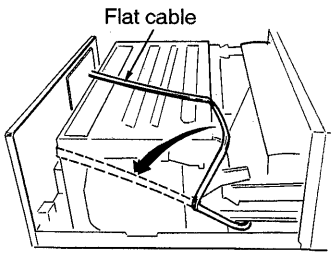


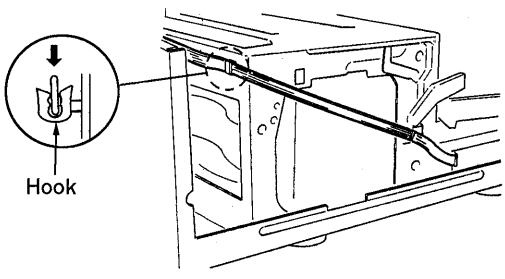
❸ Move the guide lever in the direction of arrow and then, move the loading unit to the center with relieving the engagement to stocker.





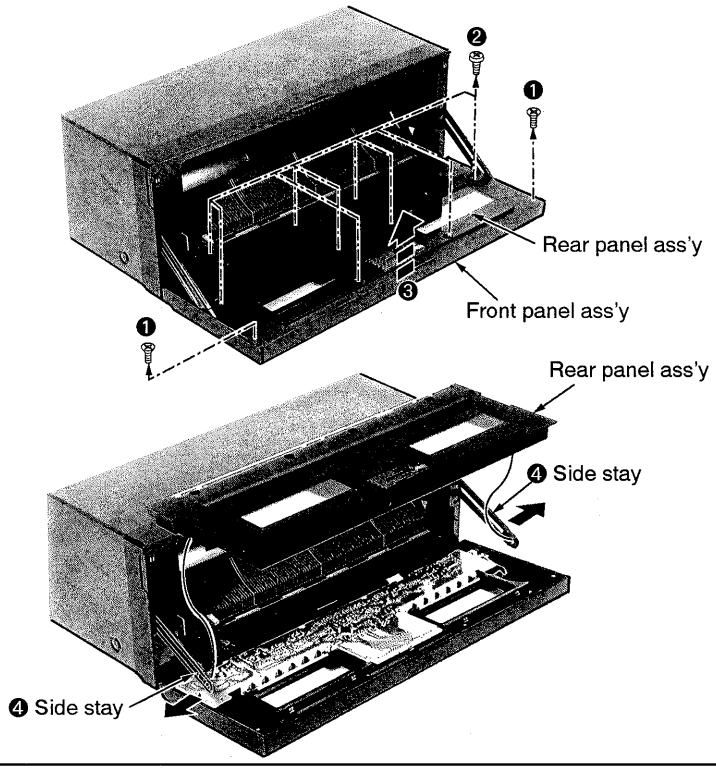
❹ With keeping the guide lever in the direction of arrow, rotate the reduction gear to counterclockwise fulley with 2mm type hexagonal wrench(SZZP1101C)





※ Arrange the flat cable in original form.

Act.3 | Front panel | Disassembly



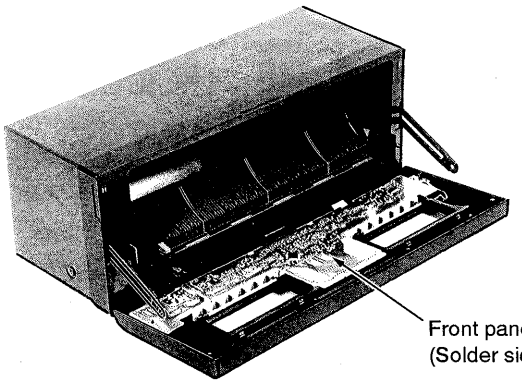
❶ Remove the 2 countersunk screws.

❷ Remove the 10 screws.

❸ Lift up the rear panel ass'y.

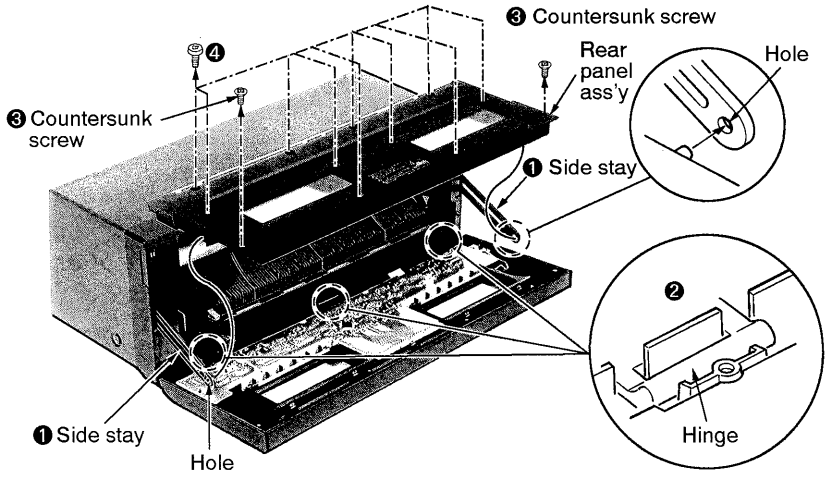
❹ Remove the rear panel ass'y with releasing the both side stays.

Act.3 | Front panel | Operation checks



• Perform the operation checks in the state as shown left.

Act.3 | Front panel | Reassembly



❶ Align the both of back panel with the hole of side stays.

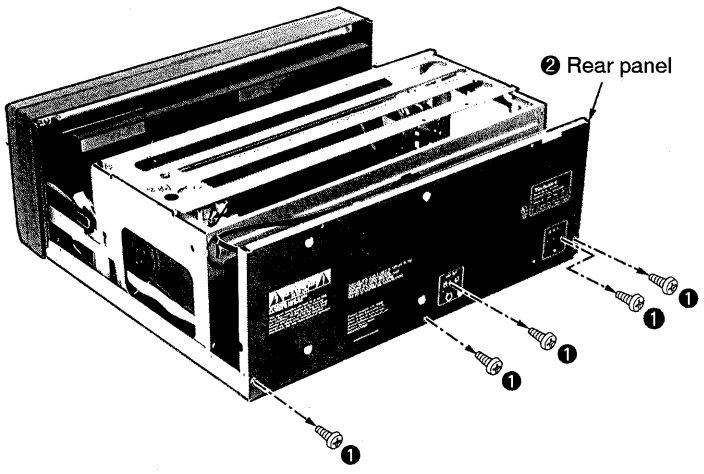
❷ Install the hinges to the rear panel ass'y.

❸ Install the 2 countersunk screws.

Make sure that the countersunk screws are in correct position.

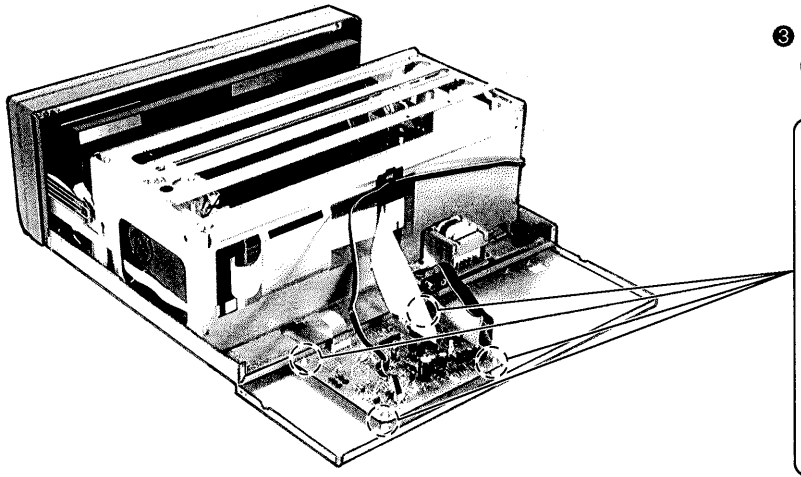
❹ Install the 10 screws.

Act.3 | Main P.C.B. | Disassembly

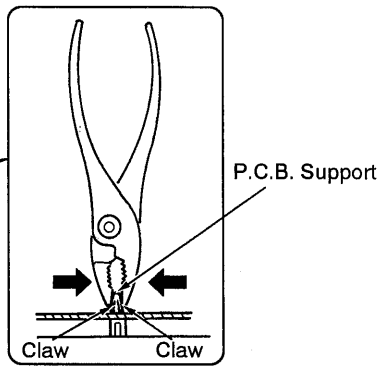


❶ Remove the 5 screws.

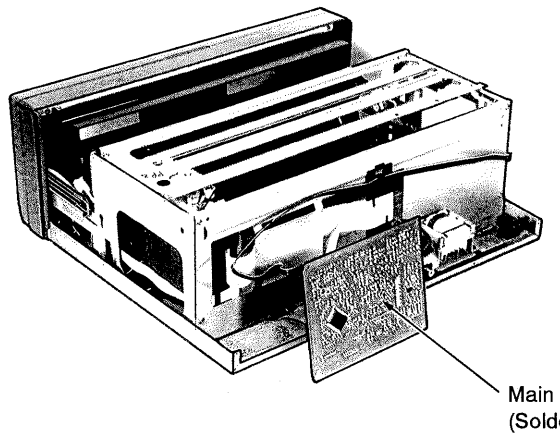
❷ Remove the rear panel.



❸ Release the P.C.B. supports from the main P.C.B..
(Pinch the claws of P.C.B. supports with plier as shown below.)



Act.3 | Main P.C.B. | Operation checks



• Perform the operation checks in the state as shown left.

Act.3 | Main P.C.B. | Reassembly

For reassembly after operation check, perform in reverse order of disassembly (❶–❸).

■ Measurements And Adjustments

Warning: This product uses a laser diode. Refer to caution statements on page 2.

Measuring Instruments and Special Tools

- Test discs
1. Playability test disc (SZZP1054C)
2. Uneven test disc (SZZP1056C)

- Musical program disc (ordinary)
- DC electronic voltmeter (EVM)

PREPARATION

1.Remove the loading unit as shown in Fig. 1.
(Refer to "Handling of the loading unit" on pages 28, 29.)
2.Set the unit in the test mode as follows: hold the STOP and PLAY keys on and set the POWER switch to ON.
(Refer to "Test mode setting" on page 21.)
3.Follow the adjustment procedure.

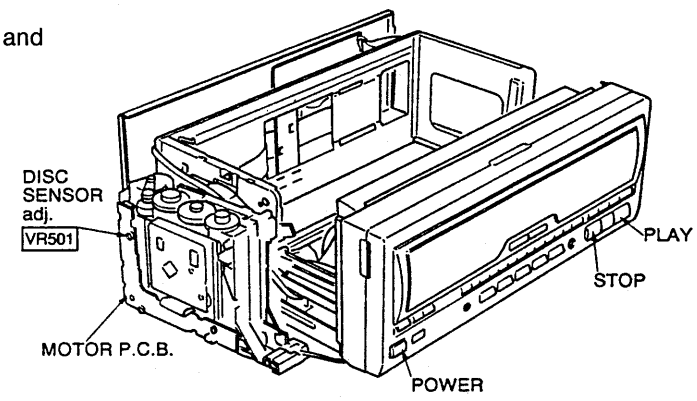


Fig.1

(1)DISC SENSOR ADJUSTMENT

1.Connect the DC electronic voltmeter across **TP501** (+) and **TP502** (−) on the motor P.C.B. as shown in Fig. 2.

2.Adjust **VR501** so that the DC electronic voltmeter read **2.8±0.1V**.

(2)CHECK OF PLAY OPERATION AFTER ADJUSTMENT

＊ Checking Skip Search

1.Play an ordinary musical program disc.
2.Press the skip button to check for normal skip search operation (in both the forward and reverse directions).

＊ Checking Manual Search

1.Play an ordinary musical program disc.
2.Press the manual search button to check for smooth manual search operations at either low or high speed (in both the forward and reverse directions).

＊ Checking Playability

1.Play the 0.7 mm black dot and the 0.7 mm wedge on the playability test disc (SZZP1054C) and verify that no sound skip or noise occurs.
2.Play the middle tracks of the uneven test disc (SZZP1056C) and verify that no sound skip or noise occurs.

■ Adjustment points

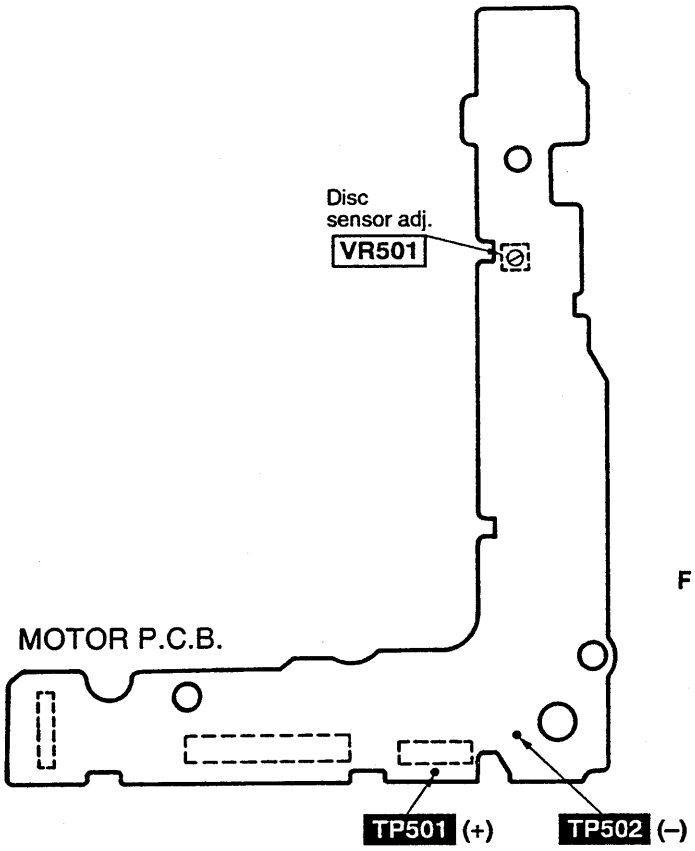
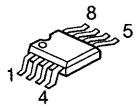


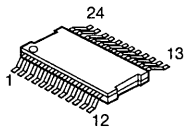
Fig.2

■ Type Illustrations of IC's, transistors and diodes

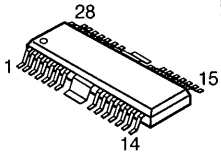
BA4558FDXE2
AT24C64



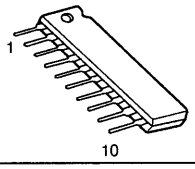
AN8389SE1



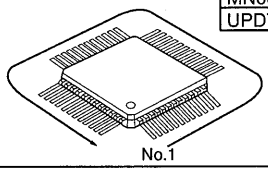
AN8835SBE1

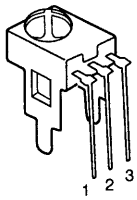


BA6247N

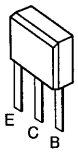


UPD78043F019	100Pin
MN662741RPA	80 Pin
UPD780T6G016	80 Pin

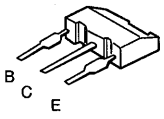




RCD12042TH

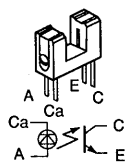


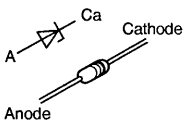
2SD3311AIQST
2SD1450RSTTA
BN1F4MTA
BA1F4MTA
2SA1037AKSTX
BA1A4PTA
BN1A4PTA
BA1A4ZTA
2SC2785FE



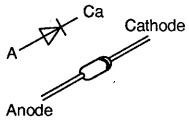
2SB1238QR
2SB1320AQRTA
2SD1862QRTV6
2SD2138PQRTA

RSQGP1S53V



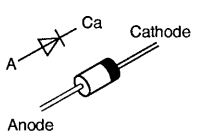


MJZJ9R1BTA
MJZJ30BTA
MJZJ6R2CT
MJZJ5R1BTA
MJZJ7R5CTA
MJZJ3R0BTA

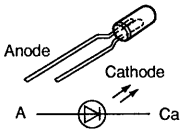


1SS254TA
1SS291TA

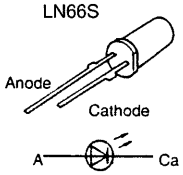
RL1N4003N02



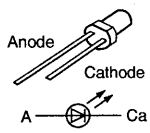
BR3433S

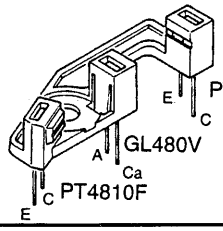


LN66S

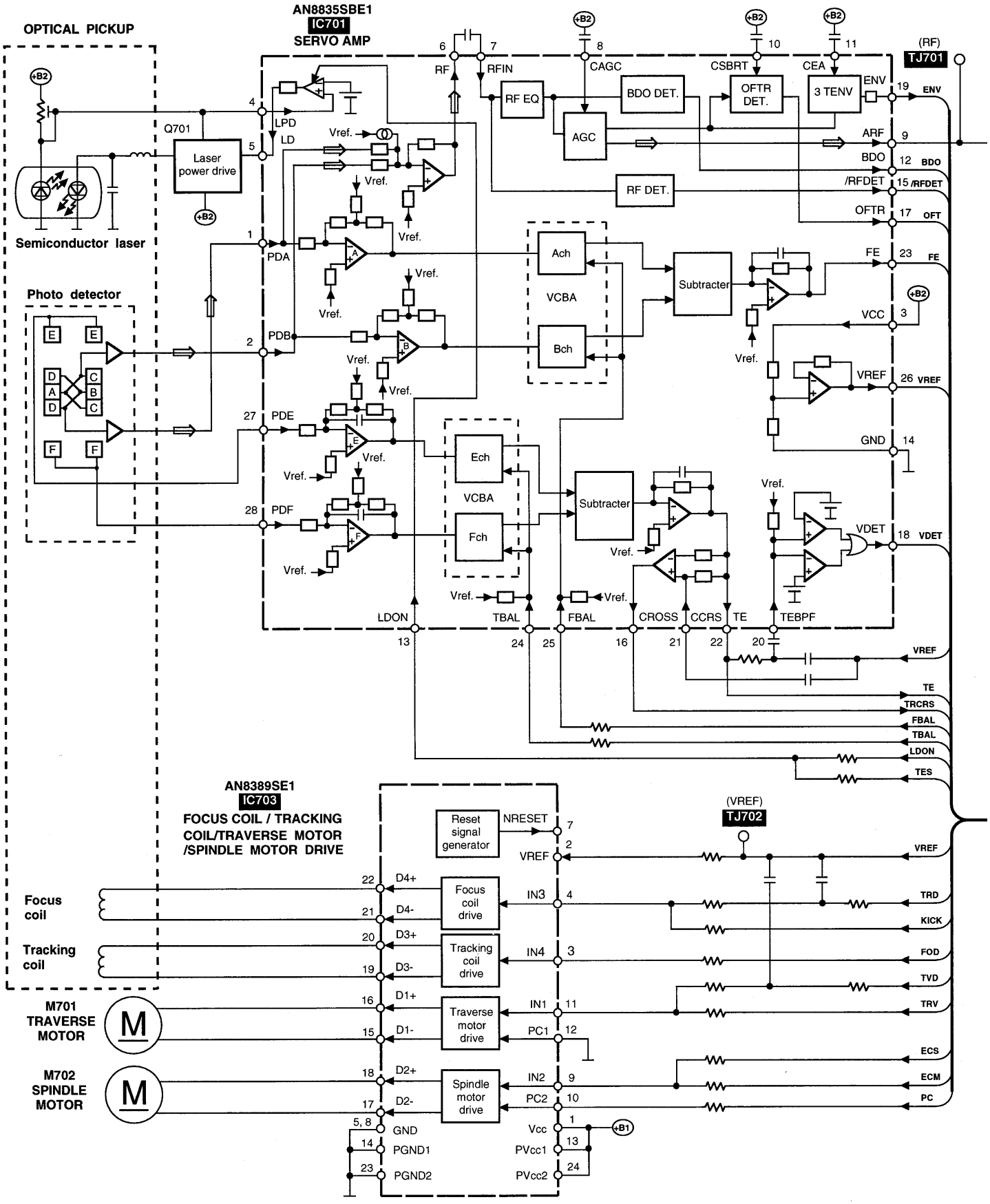


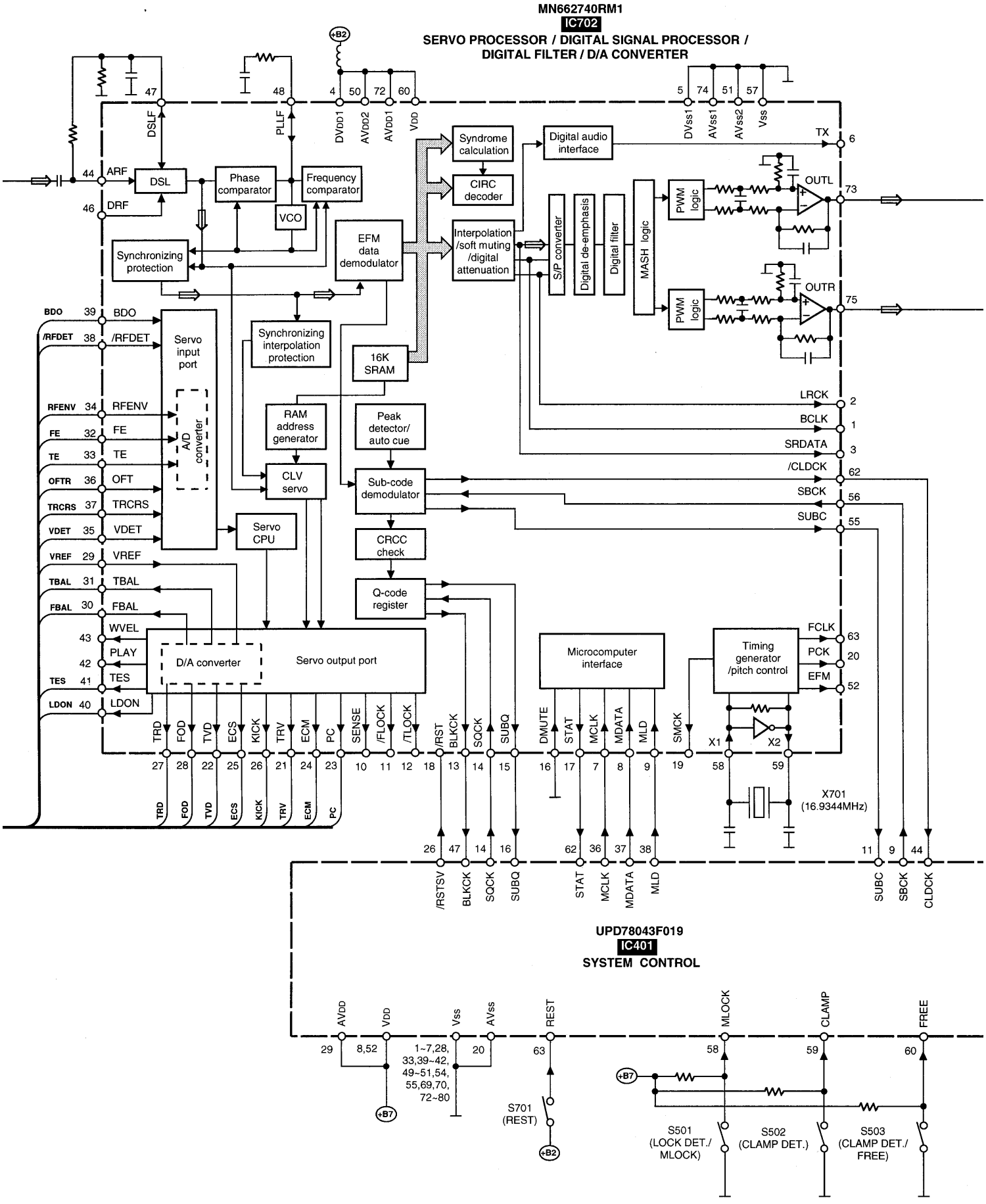
LNJ801TPSJA

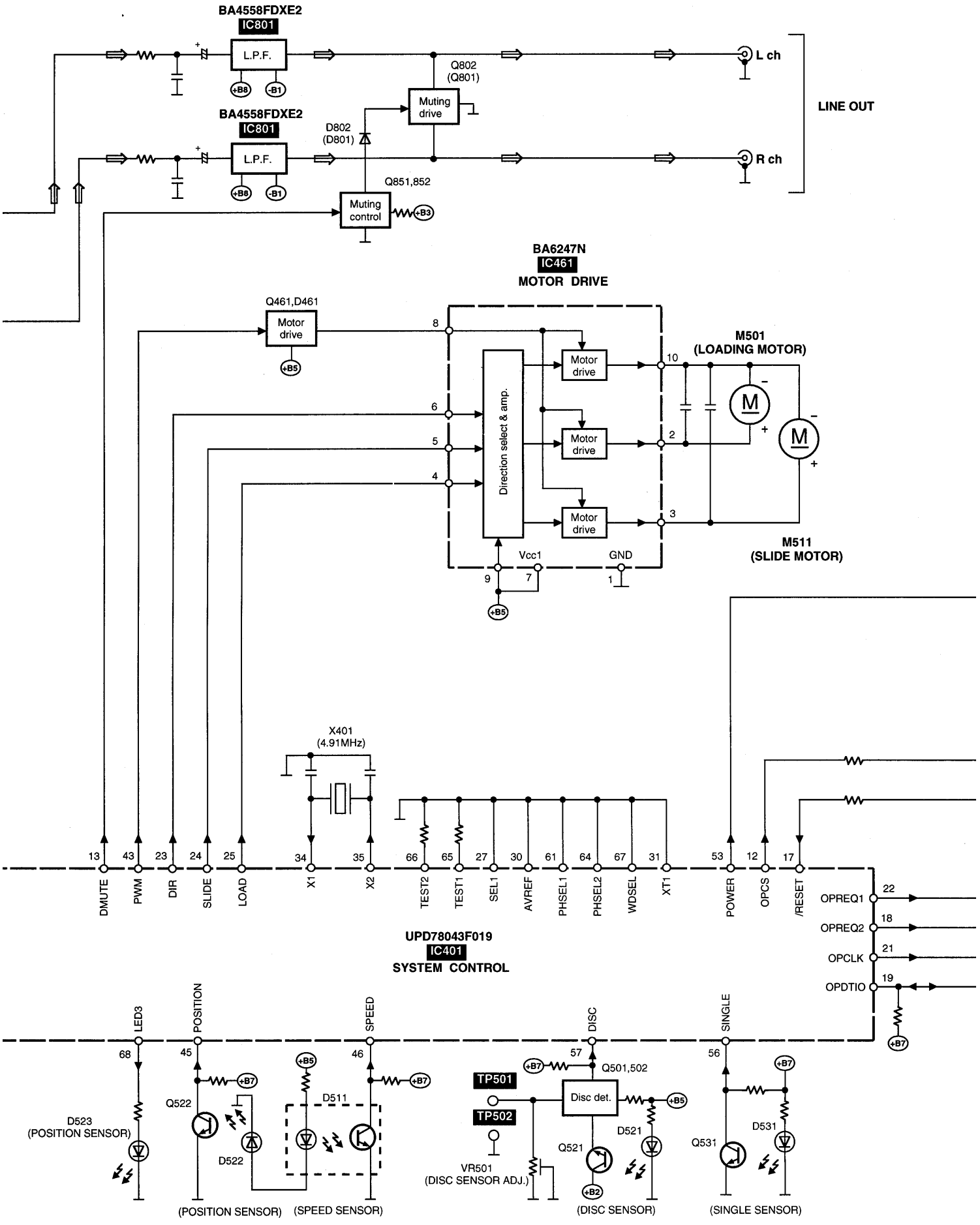


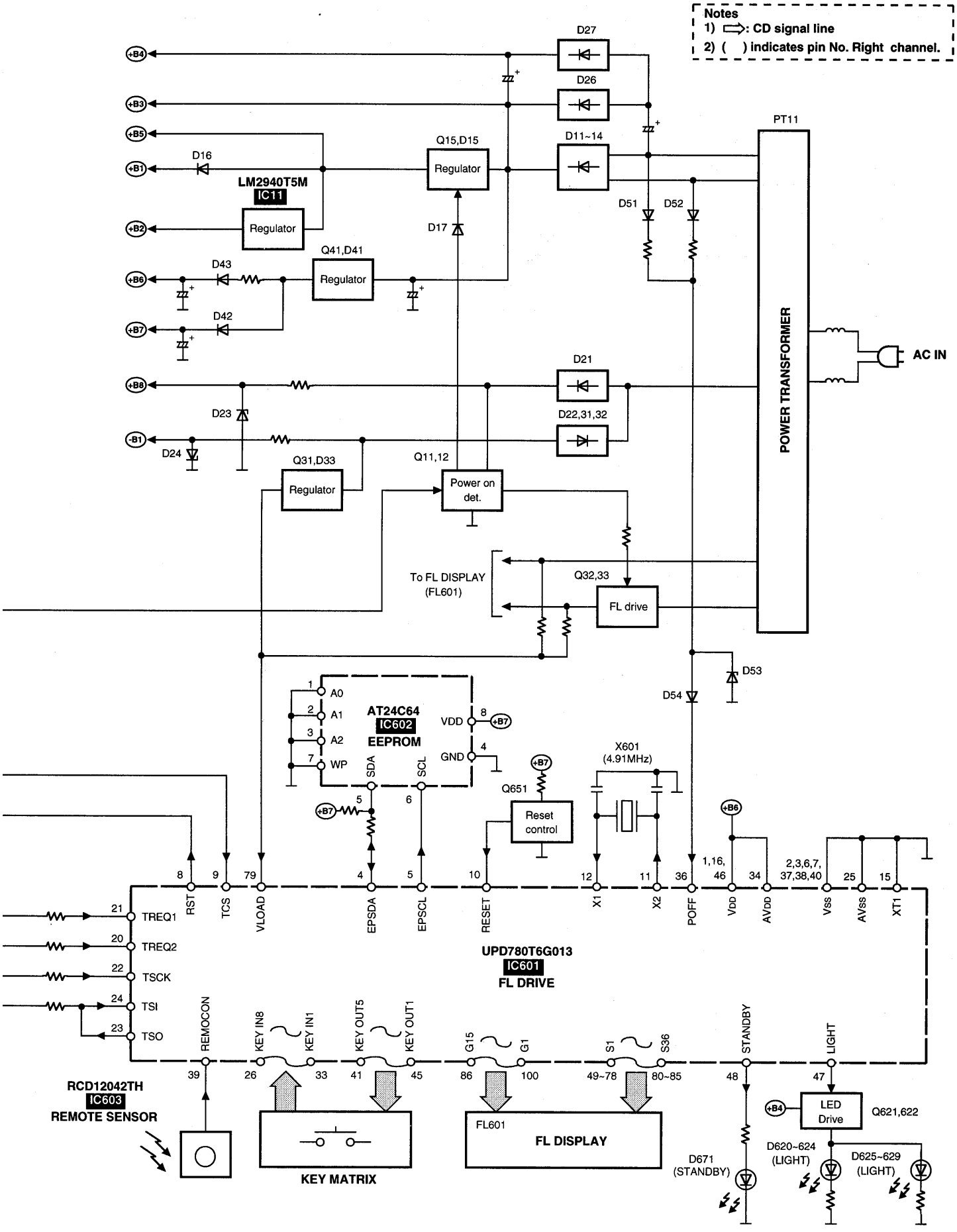


■ Block Diagram




MN662740RM1
IC702
SERVO PROCESSOR / DIGITAL SIGNAL PROCESSOR /
DIGITAL FILTER / D/A CONVERTER
+B2
DSLF
PLLF
DVDD1
AVDD2
AVDD1
VDD
DVSS1
AVSS1
AVSS2
VSS
ARF
DRF
DSL
Phase comparator
Frequency comparator
VCO
Synchronizing protection
EFM data demodulator
Syndrome calculation
CIRC decoder
Interpolation /soft muting /digital attenuation
Digital audio interface
S/P converter
Digital de-emphasis
Digital filter
MASH logic
PWM logic
TX
OUTL
OUTR
Synchronizing interpolation protection
16K SRAM
RAM address generator
Peak detector/ auto cue
CLV servo
Sub-code demodulator
CRCC check
Q-code register
Servo input port
A/D converter
Servo CPU
Servo output port
D/A converter
Microcomputer interface
Timing generator /pitch control
BDO
/RFDET
RFENV
FE
TE
OFTR
TRCRS
VDET
VREF
TBAL
FBAL
WVEL
PLAY
TES
LDON
LRCK
BCLK
SRDATA
/CLDCK
SBCK
SUBC
FCLK
PCK
EFM
X1
X2
X701
(16.9344MHz)
TRD
FOD
TVD
ECS
KICK
TRV
ECM
PC
SENSE
/FLOCK
/TLOCK
/RST
BLKCK
SQCK
SUBQ
DMUTE
STAT
MCLK
MDATA
MLD
SMCK
/RSTSV
UPD78043F019
IC401
SYSTEM CONTROL
AVDD
VDD
VSS
AVSS
REST
MLOCK
CLAMP
FREE
1~7,28, 33,39~42, 49~51,54, 55,69,70, 72~80
S701 (REST)
S501 (LOCK DET./ MLOCK)
S502 (CLAMP DET.)
S503 (CLAMP DET./ FREE)
+B7


BA4558FDXE2
IC801
L.P.F.
+B8
-B1
Q802
(Q801)
Muting drive
L ch
LINE OUT
BA4558FDXE2
IC801
D802
(D801)
L.P.F.
+B8
-B1
R ch
Q851,852
Muting control
+B3
BA6247N
IC461
MOTOR DRIVE
Q461,D461
Motor drive
+B5
8
Direction select & amp.
6
5
4
Motor drive
Motor drive
Motor drive
10
2
3
M501
(LOADING MOTOR)
M
M511
(SLIDE MOTOR)
Vcc1
GND
9
7
1
+B5
X401
(4.91MHz)
13
43
23
24
25
34
35
66
65
27
30
61
64
67
31
53
12
17
DMUTE
PWM
DIR
SLIDE
LOAD
X1
X2
TEST2
TEST1
SEL1
AVREF
PHSEL1
PHSEL2
WDSEL
XT1
POWER
OPCS
/RESET
OPREQ1
OPREQ2
OPCLK
OPDTIO
22
18
21
19
+B7
UPD78043F019
IC401
SYSTEM CONTROL
LED3
POSITION
SPEED
DISC
SINGLE
68
45
46
57
56
D523
(POSITION SENSOR)
Q522
D522
+B7
+B5
D511
TP501
TP502
VR501
(DISC SENSOR ADJ.)
Q501,502
Disc det.
+B5
D521
Q521
+B2
Q531
D531
(POSITION SENSOR)
(SPEED SENSOR)
(DISC SENSOR)
(SINGLE SENSOR)


Notes
1) ⇨: CD signal line
2) ( ) indicates pin No. Right channel.
D27
D26
D11~14
PT11
Q15,D15
Regulator
D16
LM2940T5M
IC11
Regulator
D17
D51
D52
Q41,D41
Regulator
D43
D42
AC IN
POWER TRANSFORMER
D21
D22,31,32
D23
D24
Q31,D33
Regulator
Q11,12
Power on det.
To FL DISPLAY (FL601)
Q32,33
FL drive
D53
D54
AT24C64
IC602
EEPROM
A0
A1
A2
WP
SDA
SCL
VDD
GND
X601 (4.91MHz)
Q651
Reset control
UPD780T6G013
IC601
FL DRIVE
TREQ1
TREQ2
TSCK
TSI
TSO
RST
TCS
VLOAD
EPSDA
EPSCL
RESET
X1
X2
POFF
VDD
AVDD
VSS
AVSS
XT1
REMOCON
KEY IN8
KEY IN1
KEY OUT5
KEY OUT1
G15
G1
S1
S36
STANDBY
LIGHT
RCD12042TH
IC603
REMOTE SENSOR
KEY MATRIX
FL601
FL DISPLAY
LED Drive
Q621,622
D671 (STANDBY)
D620~624 (LIGHT)
D625~629 (LIGHT)

■ Terminal Function of IC's

● IC702 (MN662740RM2): Servo processor/ digital signal processor/ digital filter/ D/A converter

No.	Mark	I/O Division	Function
1	BCLK	O	Serial bit clock output (Not used, open)
2	LRCK	O	L/R discriminating signal output (Not used, open)
3	SRDATA	O	Serial data (Not used, open)
4	DVDD1	I	Power supply (digital circuit) terminal
5	DVSS1	—	GND (digital circuit) terminal
6	TX	O	Digital audio interface signal
7	MCLK	I	Command clock signal
8	MDATA	I	Command data signal
9	MLD	I	Command load signal ("L" : LOAD)
10	SENSE	O	Sense signal (OFT, FESL, NACEND, NAJEND, POSAD, SFG)
11	/FLOCK	O	Optical servo condition (focus) ("L" : lead-in)
12	/TLOCK	O	Optical servo condition (tracking) ("L" : lead-in)
13	BLKCK	O	Sub-code block clock (f=75 Hz)
14	SQCK	I	Sub-code Q register clock
15	SUBQ	O	Sub-code Q data
16	DMUTE	—	Muting input ("H" : MUTE) (Not used, connected to GND)
17	STAT	O	Status signal (CRC, CUE, CLVS, TTSTOP, FCLV, SQCK)
18	/RST	I	Reset signal ("L" : reset)
19	SMCK	—	System clock (f=4.2336 MHz) (Not used, open)
20	PMCK	—	Frequency division clock signal ($f=\frac{1}{192}\times$ Crystal OSC(16.9344MHz) = 88.2 kHz) (Not used, open)
21	TRV	O	Traverse servo control
22	TVD	O	Traverse drive signal

No.	Mark	I/O Division	Function
23	PC	O	Turntable motor drive signal ("L" : ON)
24	ECM	O	Turntable motor drive signal (Forced mode)
25	ECS	O	Turntable motor drive signal (Servo error signal)
26	KICK	O	Kick pulse output
27	TRD	O	Tracking drive signal output
28	FOD	O	Focus drive signal output
29	VREF	I	D/A drive output (TVD, ECS, TRD, FOD, FBAL, TBAL) normal voltage input terminal
30	FBAL	O	Focus balance adj. output
31	TBAL	O	Tracking balance adj. output
32	FE	I	Focus error signal (analog input)
33	TE	I	Tracking error signal (analog input)
34	RFENV	I	RF envelope signal
35	VDET	I	Oscillation det. signal ("H" : det.)
36	OFTR	I	Off track signal ("H" : Off track)
37	TRCRS	I	Track cross signal input
38	/RFDET	I	RF detection signal ("L" : detection)
39	BDO	I	Dropout detection signal ("H" : dropout)
40	LDON	O	Laser power control ("H" : ON)
41	TES	O	Tracking error shunt output ("H" : dropout)
42	PLAY	O	Play signal ("H" : play) (Not used, open)
43	WVEL	O	Double velocity status signal ("H": double) (Not used, open)
44	ARF	I	RF signal input

No.	Mark	I/O Division	Function
45	IREF	I	Reference current input
46	DRF	I	DSL bias terminal (Not used, open)
47	DSLF	I/O	DSL loop filter terminal
48	PLLF	I/O	PLL loop filter terminal
49	VCOF	I/O	VCO loop filter terminal (Not used, connected to GND)
50	AVDD2	I	Power supply (analog circuit) terminal 2
51	AVSS2	—	GND (analog circuit) terminal
52	EFM	O	EFM signal (Not used, open)
53	PCK	O	PLL extract clock (f=4.3218MHz) (Not used, open)
54	PDO	O	Phase comparated signal of EFM and PCK (Not used, open)
55	SUBC	O	Sub-code serial output clock
56	SBCK	I	Sub-code serial input data
57	VSS	—	GND terminal
58	X1	I	Crystal oscillator terminal (f=16.9344MHz)
59	X2	O	
60	VDD	I	Reset signal ("L": reset)
61	BYTCK	O	Byte clock signal (Not used, open)
62	/CLDCK	O	Sub-code frame clock signal (f CLDCK=7.35KHz: Normal)
63	FCLK	O	Crystal frame clock (Not used, open)
64	IPFLAG	O	Interpolation flag terminal (Not used, open)

No.	Mark	I/O Division	Function
65	FLAG	O	Flag terminal (Not used, open)
66	CLVS	O	Turntable servo phase synchro signal ("H": CLV, "L": Rough servo) (Not used, open)
67	CRC	O	Sub-code CRC check terminal ("H": ON, "L": NG) (Not used, open)
68	DEMPH	O	De-emphasis ON signal ("H": ON) (Not used, open)
69	RESY	O	Re-synchronizing signal of frame sync. (Not used, open)
70	/RST2	I	Reset terminal after "MASH" circuit (Not used, connected to power supply)
71	/TEST	I	Test terminal (Normal: "H") (Not used, connected to power supply.)
72	AVDD1	I	Power supply (analog circuit) terminal (1)
73	OUTL	O	Lch audio signal
74	AVSS1	—	GND (analog circuit) terminal (1)
75	OUTR	O	Rch audio signal
76	RSEL	I	Polarity direction control terminal of RF signal (Not used, connected to power supply)
77	CSEL	I	Frequency control terminal of crystal oscillator (Not used, connected to GND)
78	PSEL	I	Test terminal (Normal: "L") (Not used, connected to GND)
79	MSEL	I	"SMCK" terminal frequency select ("L": SMCK=4.2336MHz) (Not used, connected to GND)
80	SSEL	O	"SUBQ" terminal mode select ("H": Q code buffer) (Not used, connected to power supply)

● IC401 (UPD78043F019): System control

No.	Mark	I/O Division	Function
1 ∫ 7	NONE	—	Connected to GND
8	VDD	I	Power supply terminal
9	SBCK	I	Sub-code serial input data
10	NC	—	Not connected
11	SUBC	I	Sub-code serial input clock
12	OPCS	O	Chip select terminal
13	DMUTE	O	Muting control signal
14	SQCK	O	Sub-code Q register clock
15	NC	—	Not connected
16	SUBQ	I	Sub-code Q data
17	/RESET	O	Reset signal output
18	OPREQ2	O	Request signal 2 output
19	OPDTIO	I/O	Data signal input / output
20	AVSS	—	GND terminal
21	OPCLK	O	Clock signal output
22	OPREQ1	O	Request signal 1 output
23	DIR	O	Motor control signal
24	SLIDE	O	Motor control signal
25	LOAD	O	Motor control signal
26	RSTSV	O	Reset signal output
27	SEL1	I	Connected to GND
28	VSS	—	Connected to GND

No.	Mark	I/O Division	Function
29	AVDD	I	Power supply terminal
30	AVREF	I	Power supply terminal (Not used, connected to GND)
31	XT1	—	Not used, connected to GND
32	XT2	—	Not used, open
33	VSS	—	GND terminal
34	X1	I	Crystal Osc terminal (f=4.2336MHz)
35	X2	O	
36	MCLK	O	Command clock signal
37	MDATA	O	Command data signal
38	MLD	O	Command load signal ("L" LOAD)
39 ∫ 42	VSS	—	Connected to GND
43	PWM	O	Motor control signal
44	POFF	I	Power det. terminal
45	POSITION	I	Rotary tray position det. terminal
46	SPEED	I	Loading motor speed sensor signal
47	BLKCK	I	Sub-code block clock
48	IC	—	Not used, connected to GND
49 ∫ 51	VSS	—	Connected to GND
52	VDD	I	Power supply terminal
53	POWER	O	Power ON/OFF output terminal

No.	Mark	I/O Division	Function
54	VSS	—	Connected to GND
55	VSS	—	Connected to GND
56	SINGLE	I	Disc slot det. terminal for single play
57	DISC	I	Disc control signal
58	MLOCK	I	Mechanism det. terminal (S501)
59	CLAMP	I	Mechanism det. terminal(S502)
60	FREE	I	Mechanism det. terminal (S503)
61	PHSEL1	—	Connected to GND
62	STAT	I	Status signal (CRC,CUE, CLVS, TTSTOP,FCLV, QCK)
63	REST	I	Rest position det.

No.	Mark	I/O Division	Function
64	PHSEL2	—	Connected to GND
65	STP1	—	Not used, connected to GND
66	STP2	—	Not used, connected to GND
67 ∫ 70	NONE	—	Not connected
71	VPP	I	Power supply terminal (Not used, connected to GND)
72 ∫ 80	NONE	—	Not connected

● IC703 (AN8389SE1): Focus coil/ tracking coil/ traverse motor/ spindle motor drive

No.	Mark	I/O Division	Function
1	Vcc	I	Power supply terminal
2	VREF	I	Reference voltage input terminal
3	IN4	I	Motor driver (4) input
4	IN3	I	Motor driver (3) input
5	GND	—	GND terminal
6	NC	—	Not used, connected to GND
7	NRESET	O	Reset terminal (Not used, open)
8	GND	—	GND terminal
9	IN2	O	Motor driver (2) input
10	PC2	I	Turntable motor drive signal (" L " : ON)
11	IN1	I	Motor driver (1) input
12	PC1	O	Not used, connected to GND

No.	Mark	I/O Division	Function
13	PVcc1	O	Driver power supply terminal (1)
14	PGND1	—	Driver GND terminal (1)
15	D1-	O	Motor driver (1) output terminal (-)
16	D1+	O	Motor driver (1) output terminal (+)
17	D2-	O	Motor driver (2) output terminal (-)
18	D2+	I	Motor driver (2) output terminal (+)
19	D3-	I	Motor driver (3) output terminal (-)
20	D3+	I	Motor driver (3) output terminal (+)
21	D4-	O	Motor driver (4) output terminal (-)
22	D4+	O	Motor driver (4) output terminal (+)
23	PGND2	—	Driver GND terminal (2)
24	PVCC2	I	Driver power supply (2)

● IC701 (AN8835SBE1): Servo amp

No.	Mark	I/O Division	Function
1	PDA	I	Focus signal input terminal 1 (Ach)
2	PDB	I	Focus signal input terminal 2 (Bch)
3	VCC	I	Power supply terminal
4	LPD	I	Laser PD signal
5	LD	O	Laser power auto control output
6	RF	O	RF amp terminal
7	RF IN	I	AGC input terminal
8	CAGC	I	AGC detection capacitor input
9	ARF	O	RF signal
10	CSBRT	I	OFTR capacitor connection terminal
11	CEA	I	HPF-AMP capacitor connection terminal
12	BDO	O	Dropout detection control
13	LDON	I	LD APC ON/OFF ("H": ON, "L": OFF)
14	GND	—	GND terminal

No.	Mark	I/O Division	Function
15	/RFDET	O	RF det. signal output terminal ("L" : det.)
16	CROSS	O	Tracking error zero cross output
17	OFTR	O	Off track detection ("H" : det.)
18	VDET	O	Oscillation det. signal ("H" : det.)
19	ENV	O	Envelope signal output terminal
20	TEBPF	I	Oscillation detect input terminal
21	CCRS	I	CROSS capacitor connection terminal
22	TE	O	Tracking error signal
23	FE	O	Focusing error signal
24	TBAL	I	Tracking balance adj. input
25	FBAL	I	Focus balance adj. input
26	VREF	O	Reference voltage output terminal
27	PDE	I	Tracking signal input terminal 1 (E ch)
28	PDF	I	Tracking signal input terminal 2 (F ch)

■ Schematic Diagram(Parts list on pages 63~66,70,71)

CD SERVO CIRCUIT 52,53
FRONT PANEL CIRCUIT 54
SLIDE MOTOR CIRCUIT 55
PHOTO TR (1) CIRCUIT 55
SWITCH CIRCUIT 55
SENSOR CIRCUIT 55
LED (R) CIRCUIT 55
LED (L) CIRCUIT 55
MOTOR CIRCUIT 55
MAIN CIRCUIT ..... 55~57
PHOTO TR. (2) CIRCUIT 55
POWER SUPPLY CIRCUIT 57

Notes:

- **S501:** Lock det. switch (MLOCK) .
- **S502:** Clamp det. switch (CLAMP) .
- **S503:** Clamp det. switch (FREE).
- **S601:** Stop (■) switch.⏻ /ON"(POWER, STANDBY ⏻ /ON)
- **S602,603:** Disc skip switches.(S602:+,S603:-)
- **S604:** Programing (PROGRAM) switch.
- **S605:** Single play (SINGLE ▶) switch.
- **S606:** Pause (❚❚) switch.
- **S607,608:** Track skip switches.
- **S609:** Direct programming (DIRECT) switch.
- **S610:** Power /timer set (CLOCK/TIMER) switch.
- **S611:** Record timer/play timer (◴ REC/◴ PLAY) switch.
- **S612,613:** Deck1 open (DECK1/▲ OPEN) switch.
- **S614:** Deck2 open (DECK2/▲ OPEN) switch.
- **S615:** Super woofer ON/OFF (SUPER WOOFER) switch.
- **S616~620:** Level (LEVEL) switch.
- **S621~631:** Memory set (MEMORY SET ▶▶/▶▶❙) switch.
- **S632:** Text search (TEST SEARCH) switch.
- **S633:** Disc selector (DISC) switch.
- **S634:** Disc enter (DISC ENTER) switch.
- **S635:** Test mode (TEST MODE) switch.
- **S636:** Test edit (TEST EDIT) switch.
- **S637:** Test search (TEST SEARCH) switch.
- **S701:** Rest detector.

- The voltage value and waveforms are the reference voltage of this unit measured by DC electronic voltmeter (high impedance) and oscilloscope on the basis of chassis.
  Accordingly, there may arise some error in voltage values and waveforms depending upon the internal impedance of the tester or the measuring unit.
  * The parenthesized are the values of voltage generated during playing (Test disc 1 kHz, L+R, 0 dB) ,others are voltage values in stop mode.
  * AC adaptor is used for power supply.
- : Signal lines.
  ▬▬ : Positive voltage lines and negative voltage lines.
  ⇨ : Audio signal lines.
- Important safety notice:
  Components identified by ⚠ mark have special characteristics important for safety. Furthermore, special parts which have purposes of fire-retardant (resistors), high-quality sound (capacitors), low-noise (resistors), etc. are used. When replacing any of components, be sure to use only manufacture's specified parts shown in the parts list.

Caution!

IC and LSI are sensitive to static electricity.
Secondary trouble can be prevented by taking care during repair.

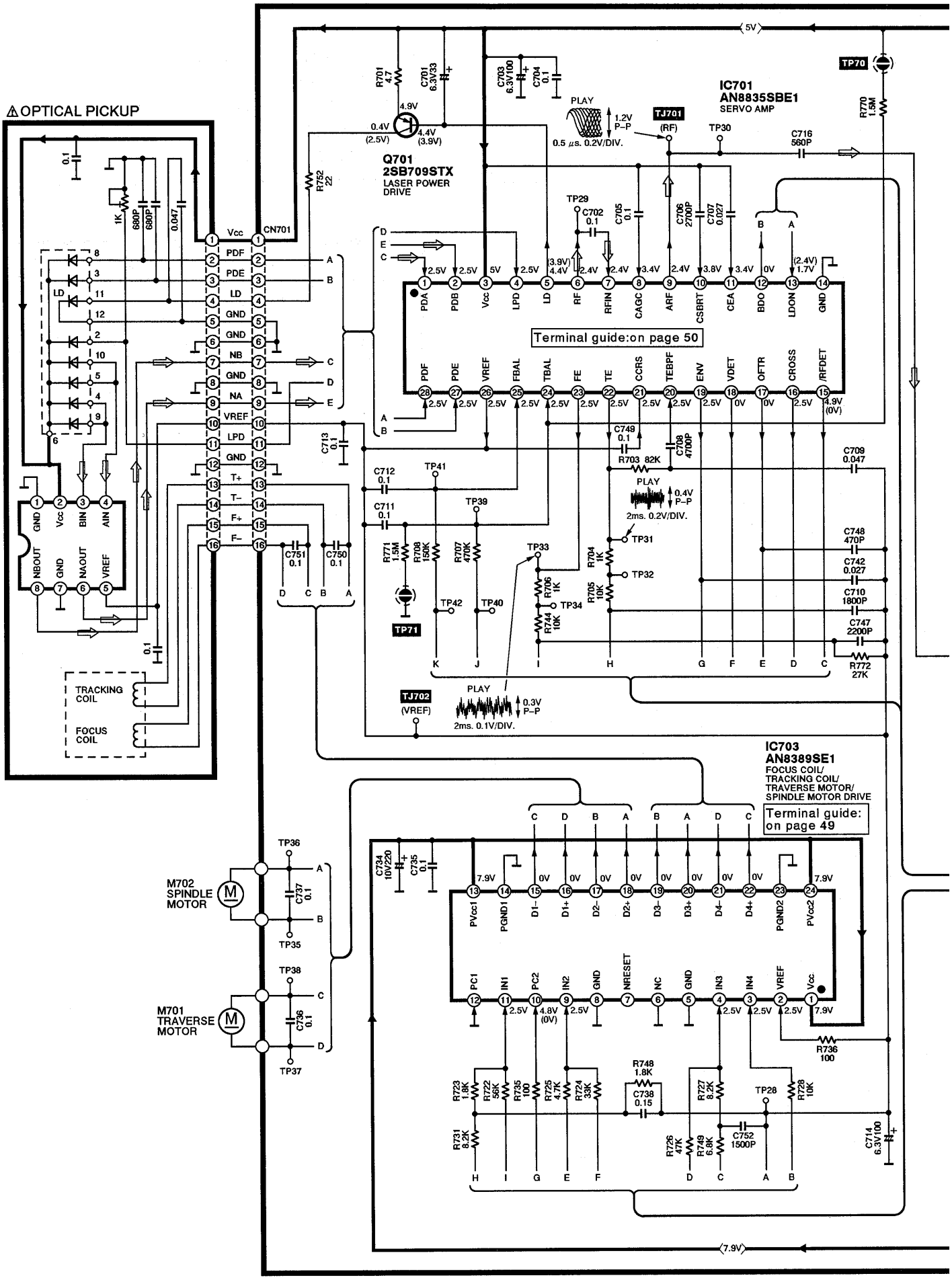
- Cover the parts boxes made of plastics with aluminum foil.
- Ground the soldering iron.
- Put a conductive mat on the work table.
- Do not touch the pins of IC or LSI with fingers directly.

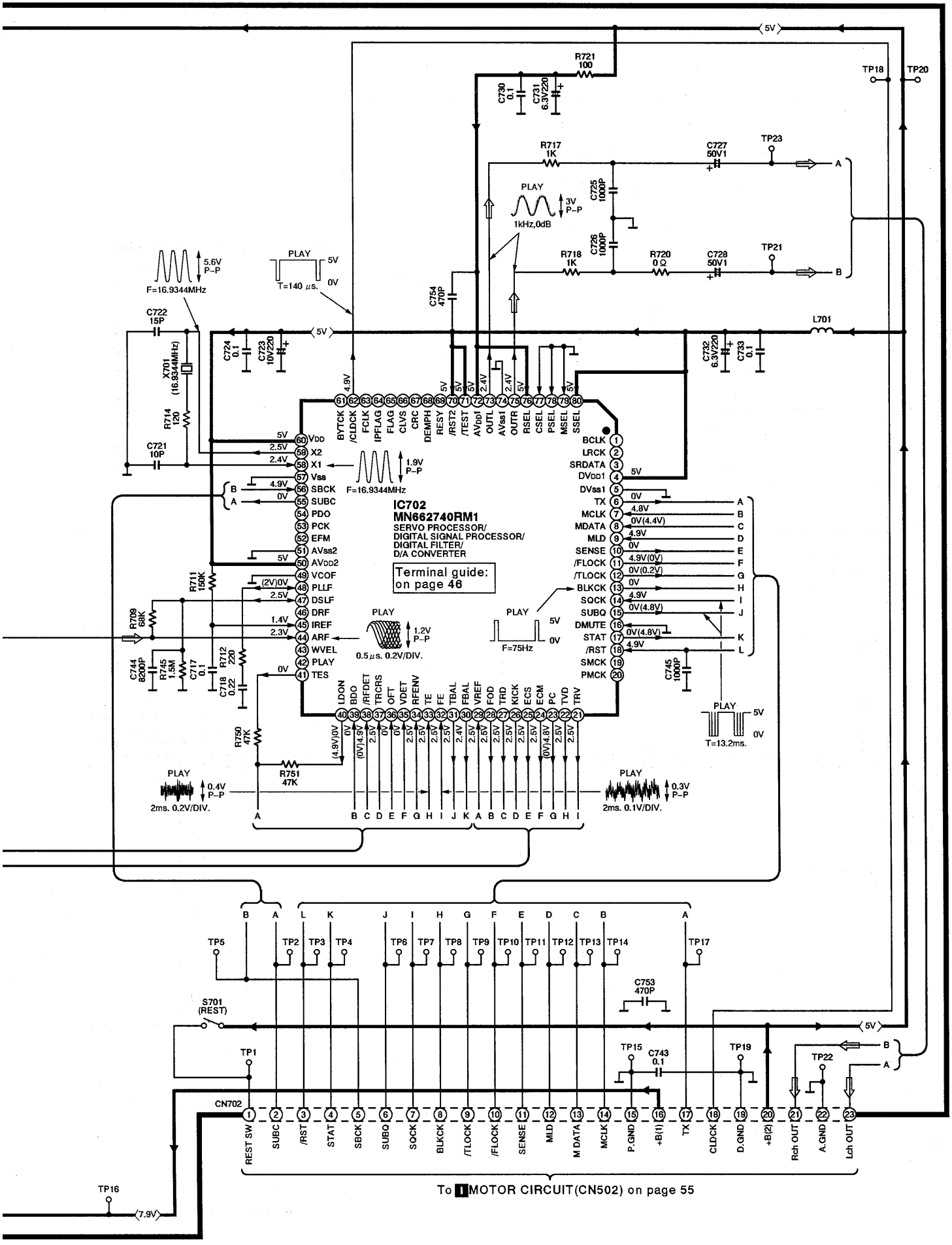
FUSE CAUTION

⊟⊠ This symbol located near the fuse indicates that the fuse used is slow operating type. For continued protection against fire hazard, replace with same type fuse. For fuse rating, refer to the marking adjacent to the symbol.

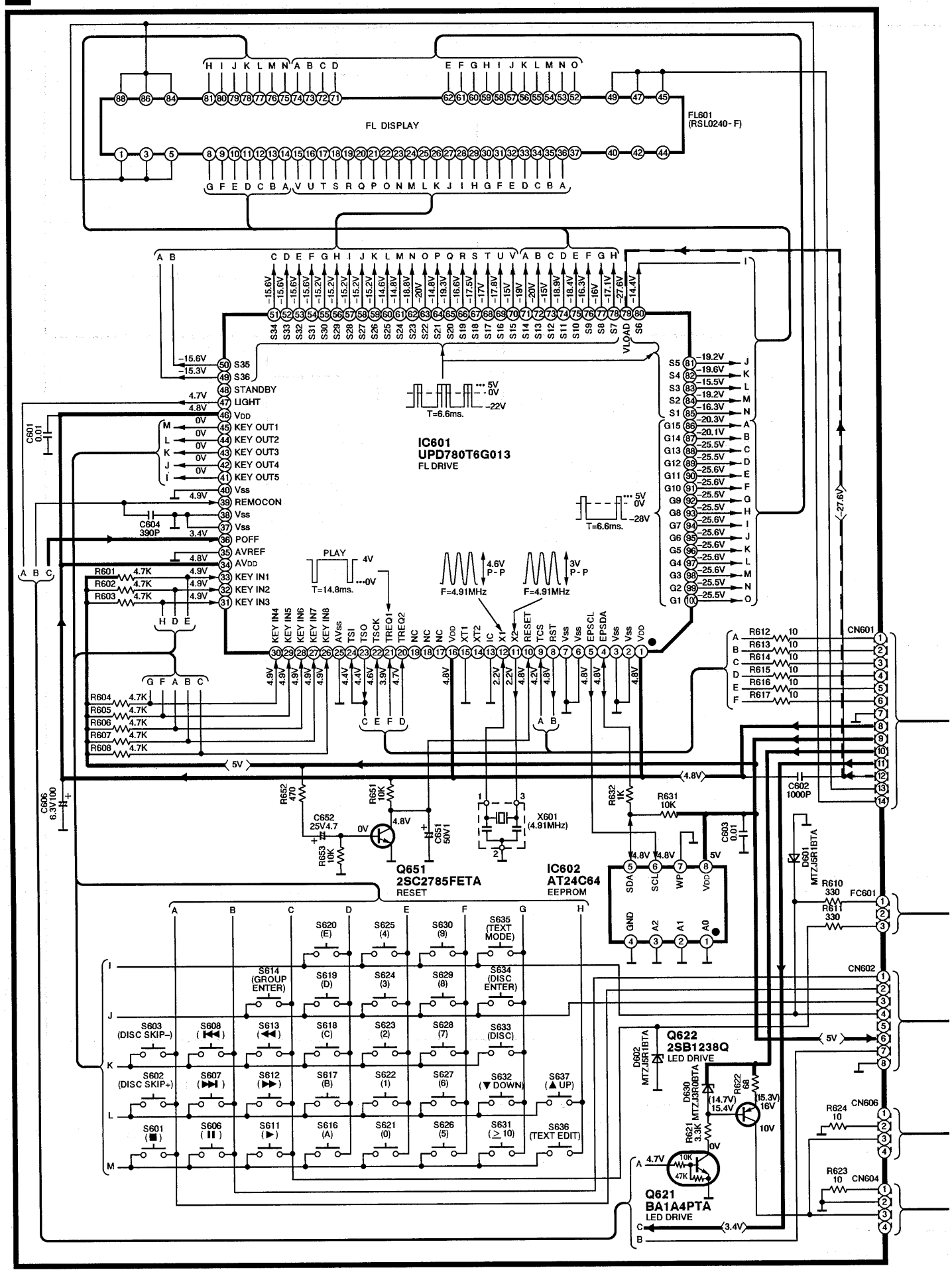
⊟⊠ Ce symbole indique que le fusible utilisé est à trot. Pour une protection permanente, n' utiliser que des fusibles de mêne type. Ce dernier est indiqué là qù le présent symbole est apposé.

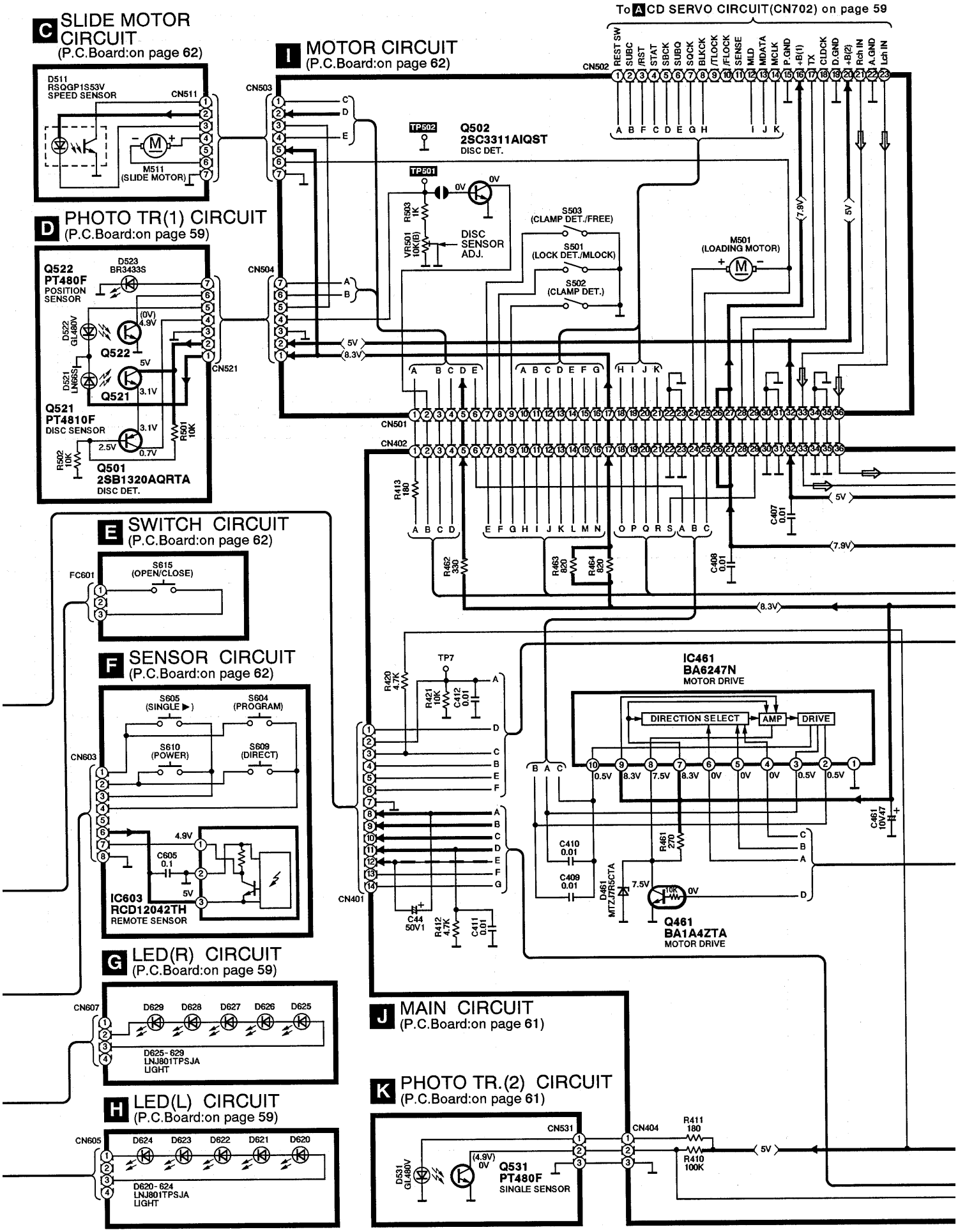
A CD SERVO CIRCUIT (P.C.Board:on page 59)

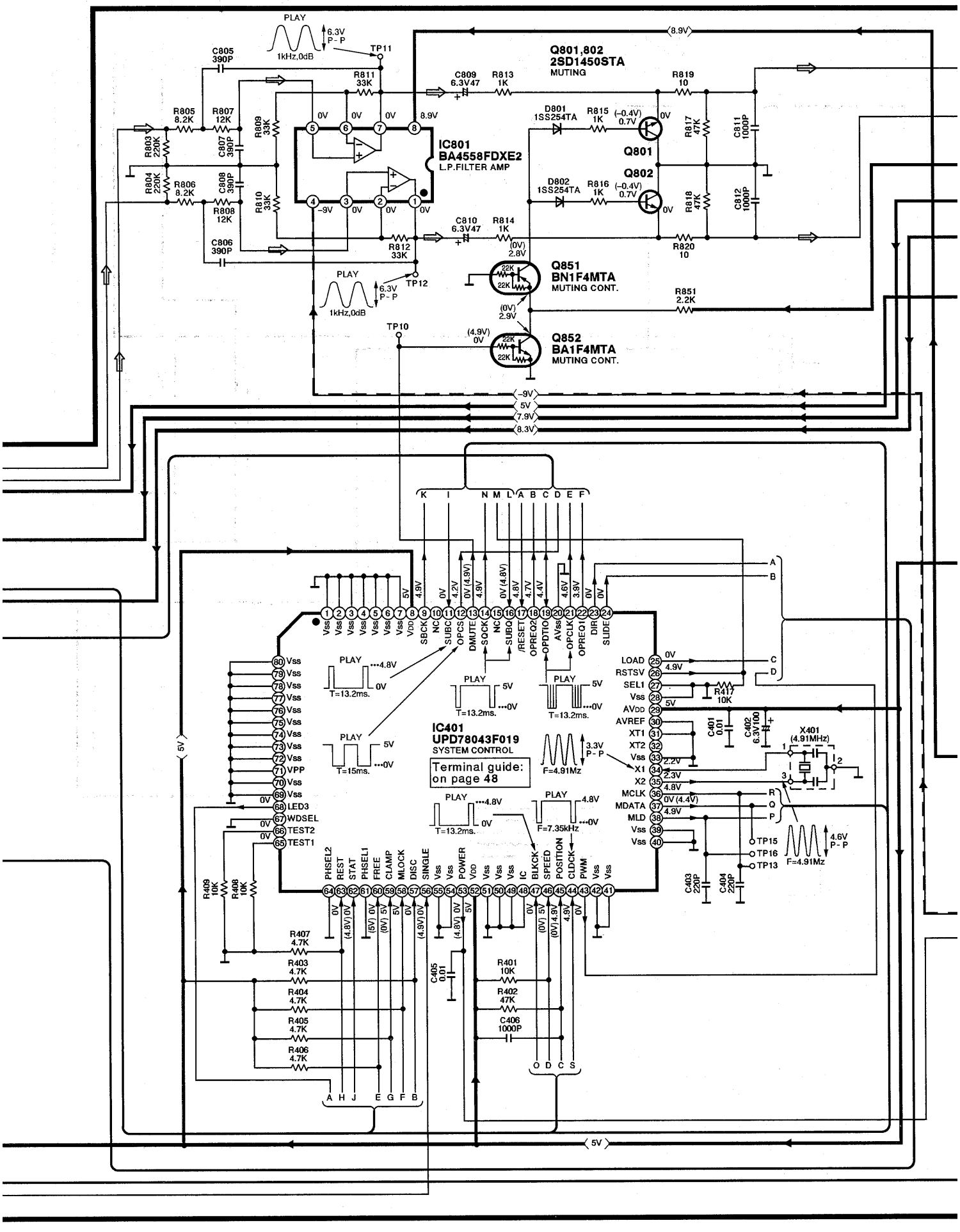


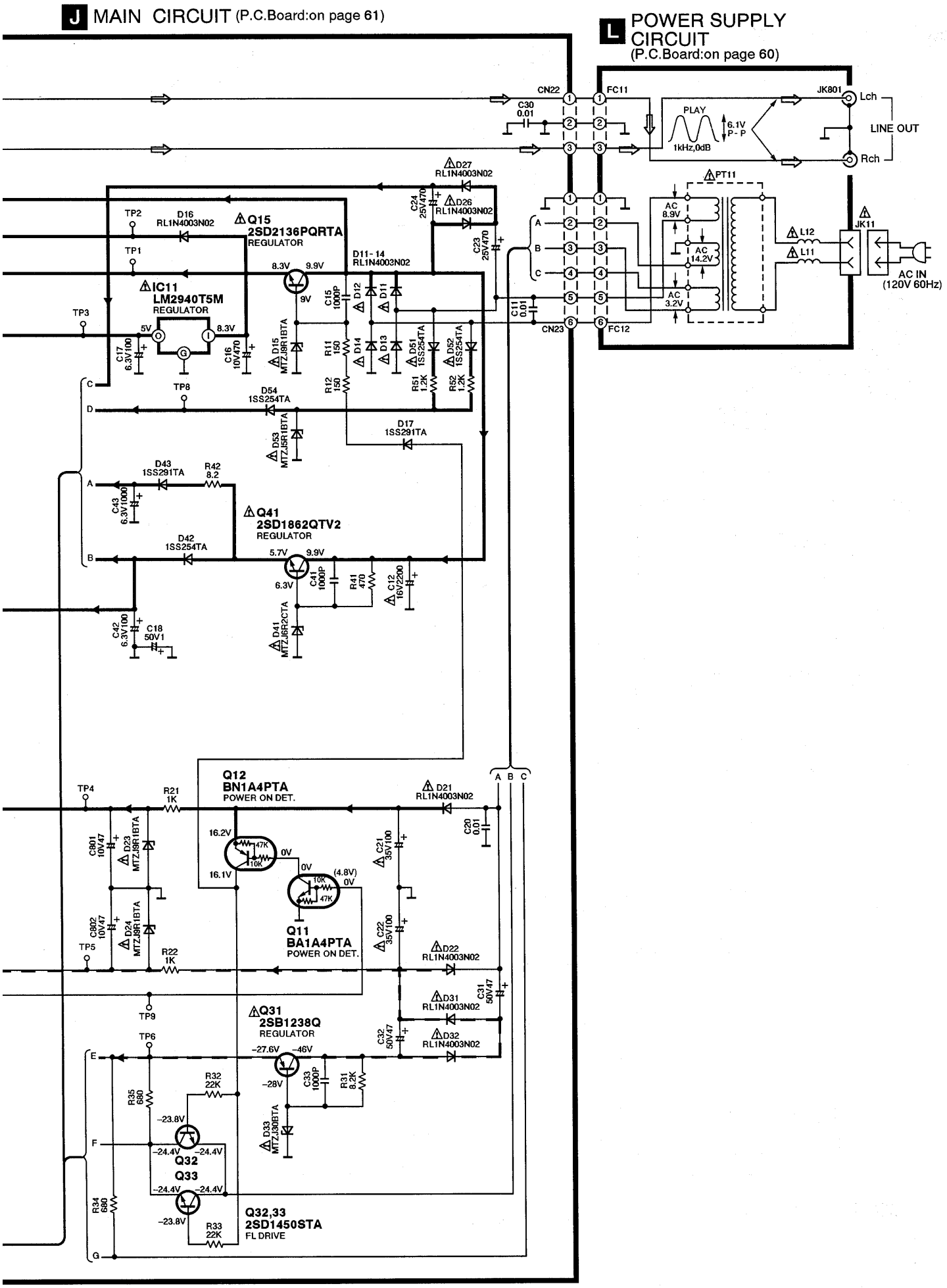

IC702
MN662740RM1
SERVO PROCESSOR/
DIGITAL SIGNAL PROCESSOR/
DIGITAL FILTER/
D/A CONVERTER
Terminal guide:
on page 46
F=16.9344MHz
5.6V P-P
T=140 µs.
PLAY
1kHz,0dB
3V P-P
1.9V P-P
1.2V P-P
0.5µs. 0.2V/DIV.
F=75Hz
T=13.2ms.
2ms. 0.2V/DIV.
0.4V P-P
2ms. 0.1V/DIV.
0.3V P-P
BYTCK /CLDCK FCLK IPFLAG FLAG CLVS CRC DEMPH RESY /RST2 /TEST AVDD1 OUTL AVss1 OUTR RSEL CSEL PSEL MSEL SSEL
VDD X2 X1 Vss SBCK SUBC PDO PCK EFM AVss2 AVDD2 VCOF PLLF DSLF DRF IREF ARF WVEL PLAY TES
BCLK LRCK SRDATA DVDD1 DVss1 TX MCLK MDATA MLD SENSE /FLOCK /TLOCK BLKCK SQCK SUBQ DMUTE STAT /RST SMCK PMCK
LDON BDO /RFDET TRCRS OFT VDET RFENV TE FE TBAL FBAL VREF FOD TRD KICK ECS ECM PC TVD TRV
REST SW SUBC /RST STAT SBCK SUBQ SQCK BLKCK /TLOCK /FLOCK SENSE MLD M DATA MCLK P.GND +B(1) TX CLDCK D.GND +B(2) Rch OUT A.GND Lch OUT
To I MOTOR CIRCUIT(CN502) on page 55

B FRONT PANEL CIRCUIT (P.C.Board:on page 60)

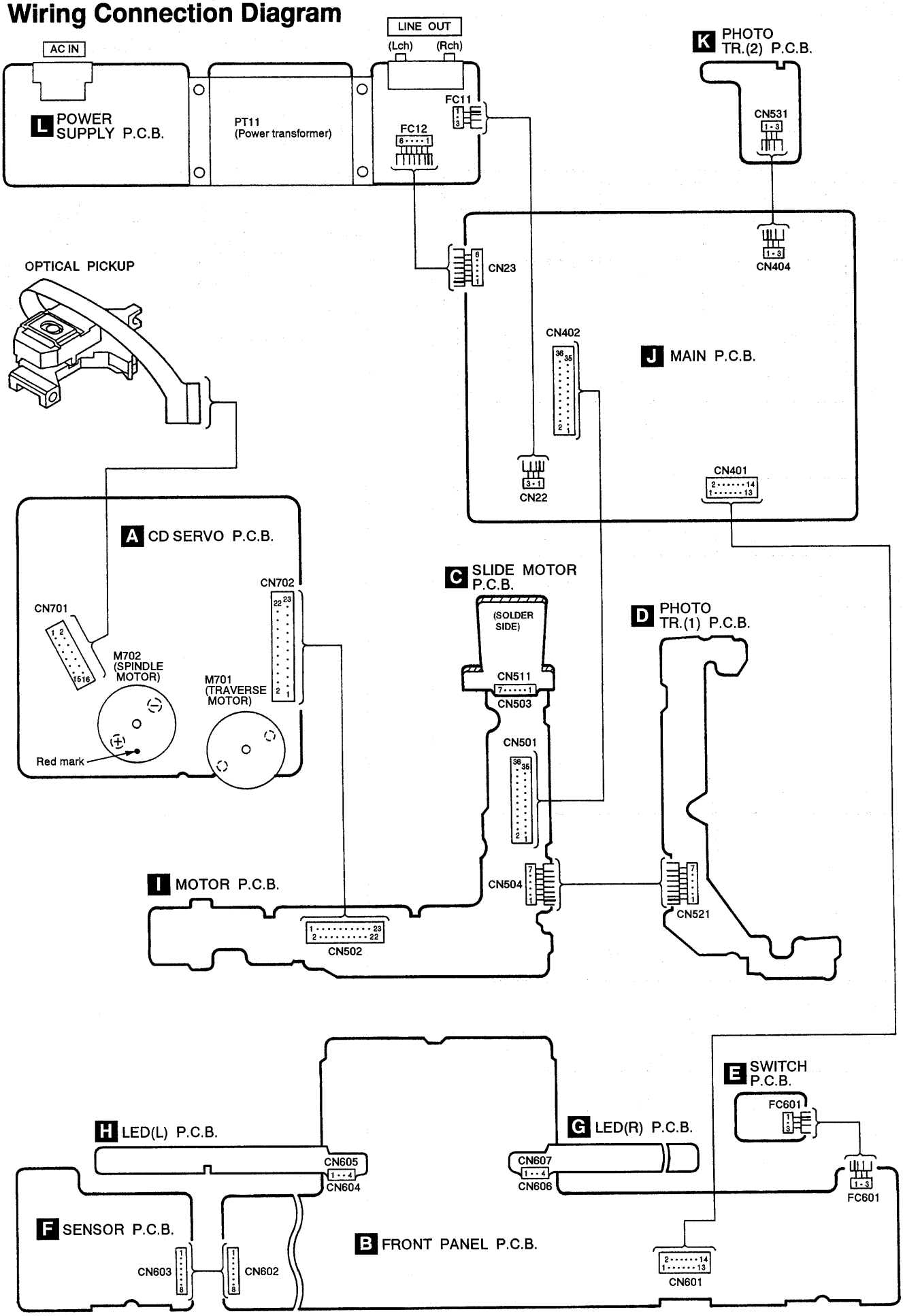



C SLIDE MOTOR CIRCUIT
(P.C.Board:on page 62)
D511
RSOGP1S53V
SPEED SENSOR
CN511
M511
(SLIDE MOTOR)
I MOTOR CIRCUIT
(P.C.Board:on page 62)
To A CD SERVO CIRCUIT(CN702) on page 59
CN502
REST SW
SUBC
/RST
STAT
SBCK
SUBQ
SOCK
BLKCK
/TLOCK
/FLOCK
SENSE
MLD
MDATA
MCLK
P.GND
+B(1)
TX
CLDCK
D.GND
+B(2)
Rch IN
A.GND
Lch IN
CN503
TP502
Q502
2SC3311AIQST
DISC DET.
TP501
0V
R503
1K
VR501
10K(B)
DISC
SENSOR
ADJ.
S503
(CLAMP DET./FREE)
S501
(LOCK DET./MLOCK)
S502
(CLAMP DET.)
M501
(LOADING MOTOR)
7.9V
5V
D PHOTO TR(1) CIRCUIT
(P.C.Board:on page 59)
Q522
PT480F
POSITION
SENSOR
D523
BR3433S
D522
GL480V
(0V)
4.9V
Q522
D521
LN66S
5V
Q521
3.1V
Q521
PT4810F
DISC SENSOR
3.1V
2.5V
0.7V
R501
10K
R502
10K
Q501
2SB1320AQRTA
DISC DET.
CN504
CN521
8.3V
CN501
CN402
R413
180
C407
0.01
R462
330
R463
820
R464
820
C408
0.01
E SWITCH CIRCUIT
(P.C.Board:on page 62)
FC601
S615
(OPEN/CLOSE)
F SENSOR CIRCUIT
(P.C.Board:on page 62)
S605
(SINGLE ▶)
S604
(PROGRAM)
S610
(POWER)
S609
(DIRECT)
CN603
4.9V
C605
0.1
5V
IC603
RCD12042TH
REMOTE SENSOR
TP7
R420
4.7K
R421
10K
C412
0.01
CN401
C44
50V1
R412
4.7K
C411
0.01
IC461
BA6247N
MOTOR DRIVE
DIRECTION SELECT
AMP
DRIVE
0.5V
8.3V
7.5V
8.3V
0V
0V
0V
0.5V
0.5V
C461
10V47
C410
0.01
C409
0.01
R461
270
D461
MTZJ7R5CTA
7.5V
10K
0V
Q461
BA1A4ZTA
MOTOR DRIVE
G LED(R) CIRCUIT
(P.C.Board:on page 59)
CN607
D629
D628
D627
D626
D625
D625-629
LNJ801TPSJA
LIGHT
H LED(L) CIRCUIT
(P.C.Board:on page 59)
CN605
D624
D623
D622
D621
D620
D620-624
LNJ801TPSJA
LIGHT
J MAIN CIRCUIT
(P.C.Board:on page 61)
K PHOTO TR.(2) CIRCUIT
(P.C.Board:on page 61)
CN531
CN404
R411
180
R410
100K
5V
D531
GL480V
(4.9V)
0V
Q531
PT480F
SINGLE SENSOR


IC801
BA4558FDXE2
L.P.FILTER AMP
Q801,802
2SD1450STA
MUTING
Q801
Q802
Q851
BN1F4MTA
MUTING CONT.
Q852
BA1F4MTA
MUTING CONT.
IC401
UPD78043F019
SYSTEM CONTROL
Terminal guide:
on page 48
X401
(4.91MHz)
PLAY
1kHz,0dB
TP10
TP11
TP12
TP13
TP15
TP16
-9V
5V
7.9V
8.3V
8.9V


J MAIN CIRCUIT (P.C.Board:on page 61)
L POWER SUPPLY CIRCUIT (P.C.Board:on page 60)
CN22
FC11
JK801
Lch
Rch
LINE OUT
PLAY
6.1V P-P
1kHz,0dB
C30 0.01
PT11
AC 8.9V
AC 14.2V
AC 3.2V
L12
L11
JK11
AC IN (120V 60Hz)
CN23
FC12
C11 0.01
D27 RL1N4003N02
D26 RL1N4003N02
C24 25V470
C23 25V470
TP2
D16 RL1N4003N02
Q15 2SD2136PQRTA REGULATOR
TP1
IC11 LM2940T5M REGULATOR
8.3V
9.9V
9V
5V
8.3V
TP3
C17 6.3V100
C16 10V470
C15 1000P
D12
D11
D11-14 RL1N4003N02
D15 MTZJ6R1BTA
R11 150
D14
D13
D51 1SS254TA
D52 1SS254TA
R12 150
R51 1.2K
R52 1.2K
TP8
D54 1SS254TA
D53 MTZJ5R1BTA
D17 1SS291TA
D43 1SS291TA
R42 8.2
C43 6.3V1000
Q41 2SD1862QTV2 REGULATOR
D42 1SS254TA
5.7V
9.9V
6.3V
C41 1000P
R41 470
C12 16V2200
C42 6.3V100
C18 50V1
D41 MTZJ6R2CTA
TP4
R21 1K
Q12 BN1A4PTA POWER ON DET.
D21 RL1N4003N02
C20 0.01
16.2V
16.1V
47K
10K
0V
(4.8V)
C801 10V47
D23 MTZJ6R1BTA
C802 10V47
D24 MTZJ6R1BTA
C21 35V100
C22 35V100
Q11 BA1A4PTA POWER ON DET.
TP5
R22 1K
D22 RL1N4003N02
D31 RL1N4003N02
C31 50V47
C32 50V47
D32 RL1N4003N02
TP9
Q31 2SB1238Q REGULATOR
TP6
-27.6V
-46V
-28V
R32 22K
C33 1000P
R31 8.2K
R35 680
-23.8V
D33 MTZJ30BTA
-24.4V
Q32
Q33
R34 680
Q32,33 2SD1450STA FL DRIVE
R33 22K
A B C
E
F
G

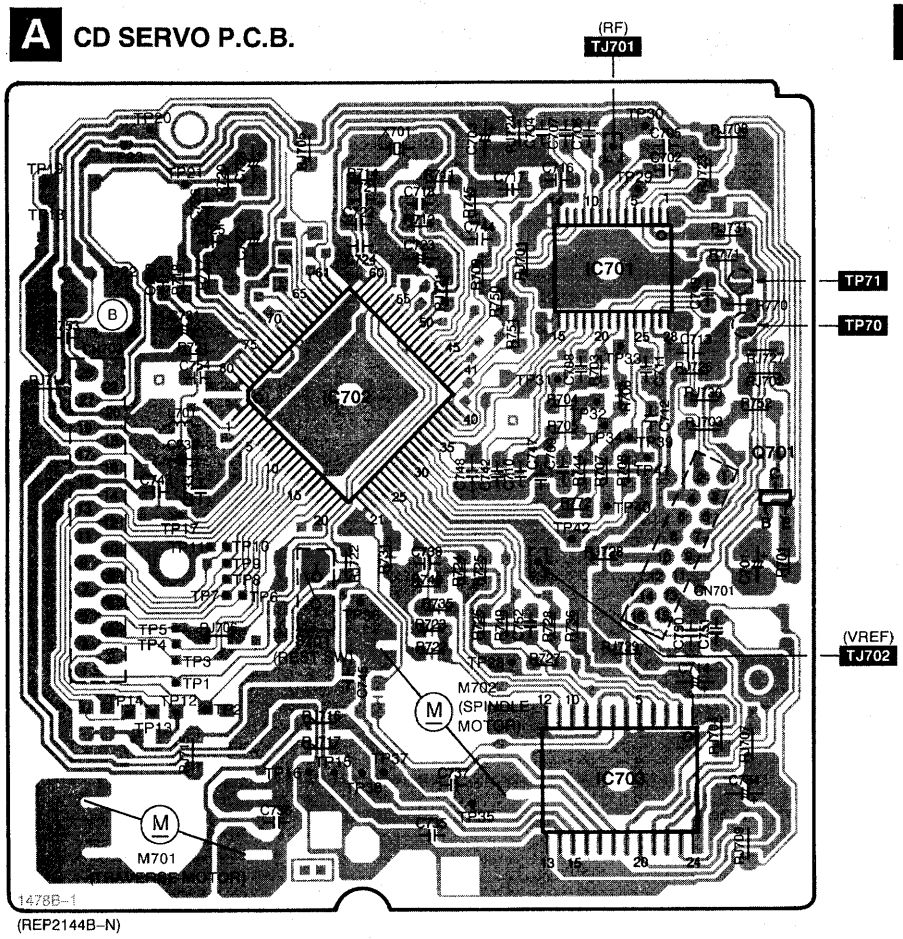
■ Wiring Connection Diagram



■ Printed Circuit Board Diagram

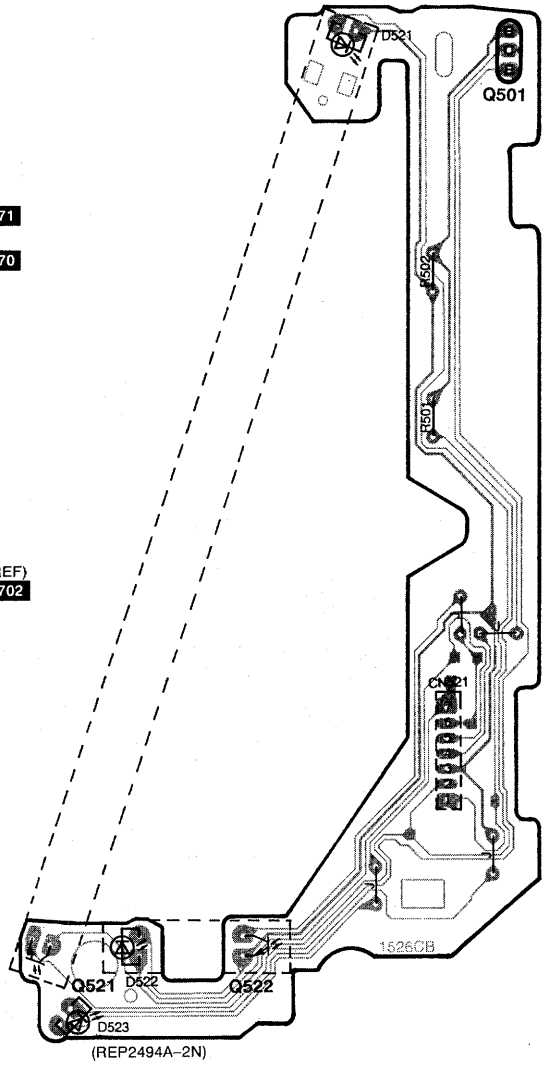
● This printed circuit board diagram may be modified at any time with the development of new technology.

A CD SERVO P.C.B.



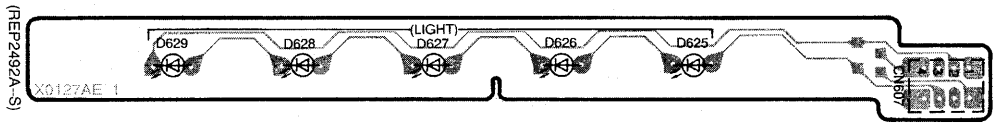
(REP2144B-N)

D PHOTO TR.(1) P.C.B.

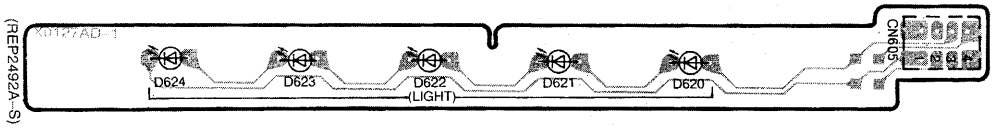


(REP2494A-2N)

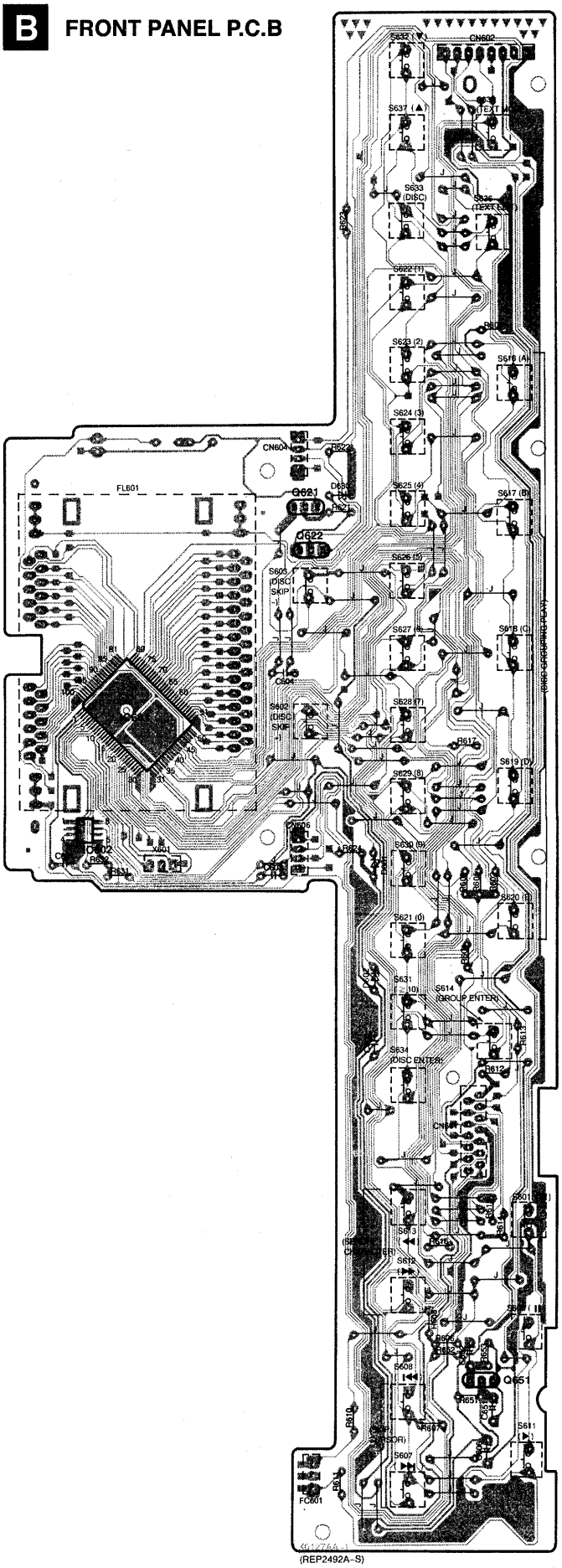
G LED (R) P.C.B.



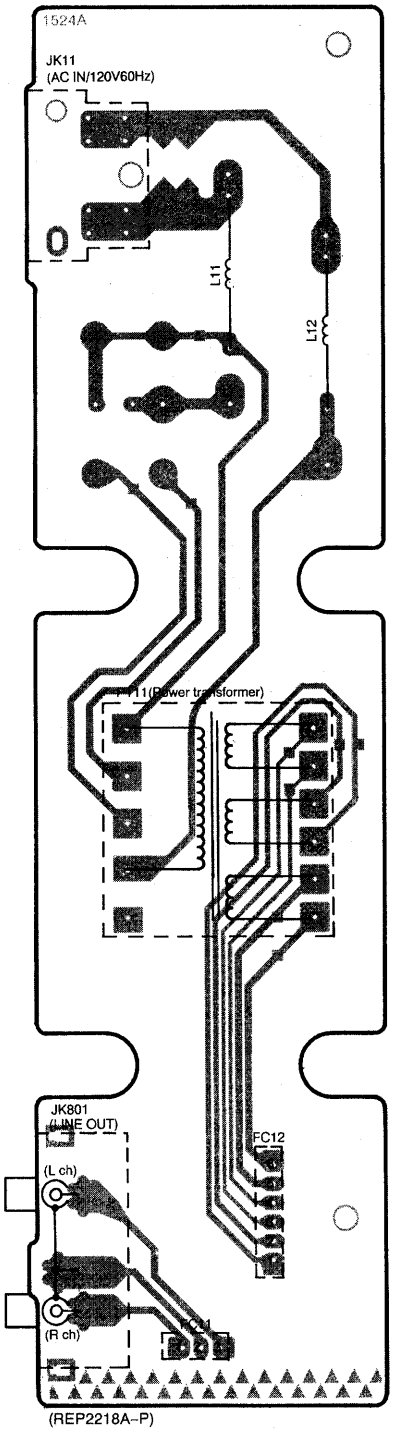
H LED (L) P.C.B.



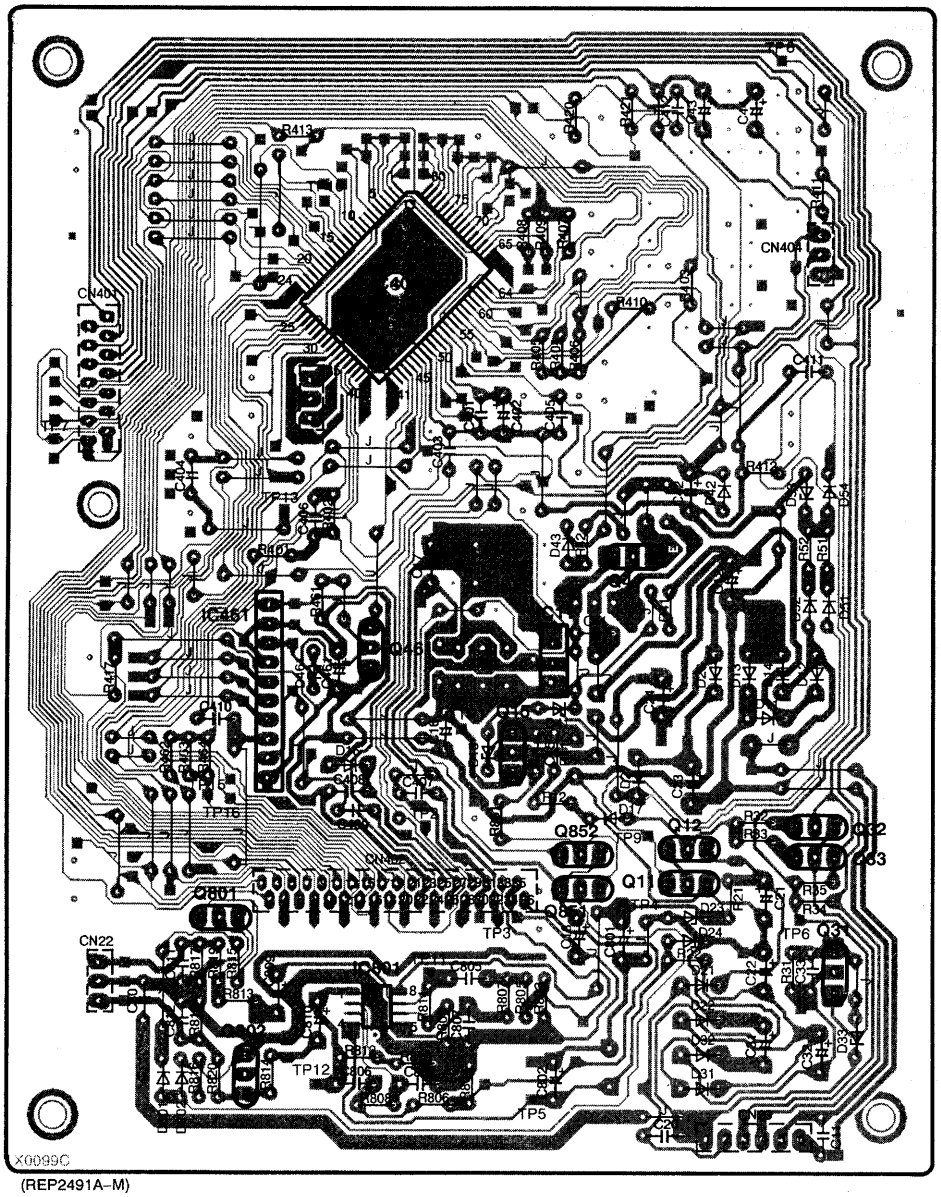
B FRONT PANEL P.C.B



L POWER SUPPLY P.C.B.

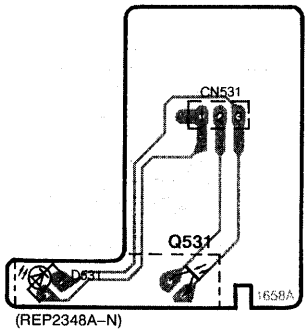


J MAIN P.C.B.



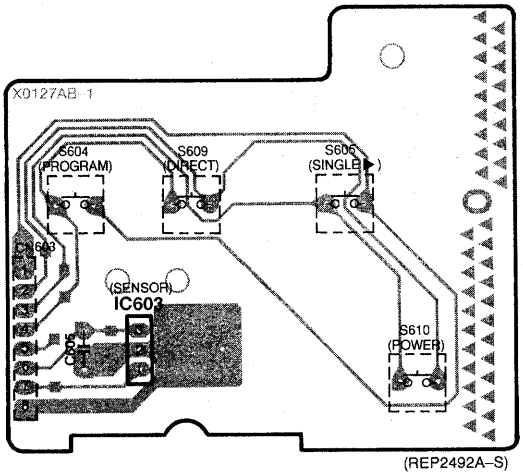
(REP2491A–M)

K PHOTO TR. (2) P.C.B.



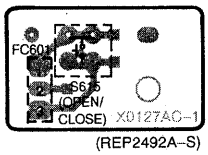
(REP2348A–N)

F SENSOR P.C.B.



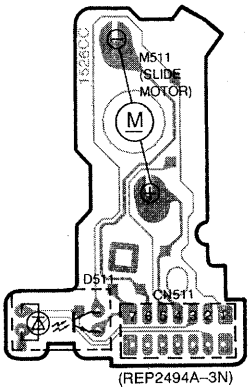
(REP2492A-S)

E SWITCH P.C.B.

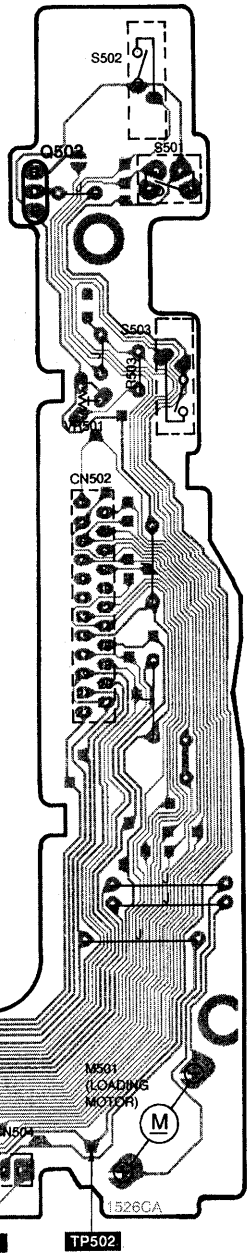


(REP2492A-S)

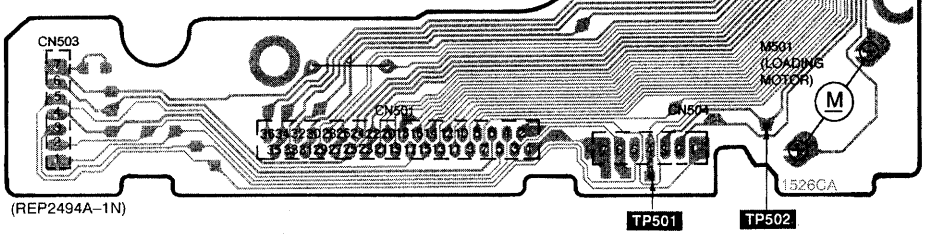
C SLIDE MOTOR P.C.B.



(REP2494A-3N)



I MOTOR P.C.B.



(REP2494A-1N)

■ Replacement Parts List

Notes: * Important safety notice:
Components identified by ⚠ mark have special characteristics important for safety.
Furthermore, special parts which have purposes of fire-retardant (resistors), high-quality sound (capacitors), low-noise (resistors), etc. are used.
When replacing any of components, be sure to use only manufacturer's specified parts shown in the parts list.
* The parenthesized indications in the Remarks columns specify the areas. (Refer to the cover page for area.)
Parts without these indications can be used for all areas.
* Warning: This product uses a laser diode. Refer to caution statements on page 2.
* [M] indicates in Remarks columns parts that are supplied by MESA.

Ref. No.	Part No.	Part Name & Description	Remarks
		INTEGRATED CIRCUIT(S)	
IC11	LM2940T5M	IC	[M]⚠
IC401	UPD78043F019	IC	[M]
IC461	BA6247N	IC	[M]
IC601	UPD780T6G016	IC	[M]
IC602	AT24C64	IC	[M]
IC603	RCD12042TH	IC	[M]
IC701	AN8835SBE1	IC	[M]
IC702	MN662741RPA	IC	[M]
IC703	AN8389SE1	IC	[M]
IC801	BA4558FDXE2	IC	[M]
		TRANSISTOR(S)	
Q11	BA1A4PTA	TRANSISTOR	[M]
Q12	BN1A4PTA	TRANSISTOR	[M]
Q15	2SD2136PQRTA	TRANSISTOR	[M]⚠
Q31	2SB1238QS	TRANSISTOR	[M]⚠
Q32, 33	2SD1450RTA	TRANSISTOR	[M]
Q41	2SD1862QTV2	TRANSISTOR	[M]⚠
Q461	BA1A4ZTA	TRANSISTOR	[M]
Q501	2SB1320AQRTA	TRANSISTOR	[M]
Q502	2SC3311AIQST	TRANSISTOR	[M]
Q521	PT4810F	TRANSISTOR	[M]
Q522	PT480F	TRANSISTOR	[M]
Q531	PT480F	TRANSISTOR	[M]
Q621	BA1A4PTA	TRANSISTOR	[M]
Q622	2SB1238QR	TRANSISTOR	[M]
Q651	2SC2785FE	TRANSISTOR	[M]
Q701	2SA1037AKSTX	TRANSISTOR	[M]
Q801, 802	2SD1450RTA	TRANSISTOR	[M]
Q851	BN1F4MTA	TRANSISTOR	[M]
Q852	BA1F4MTA	TRANSISTOR	[M]
		DIODE(S)	
D11-14	RL1N4003N02	DIODE	[M]⚠
D15	MTZJ9R1BTA	DIODE	[M]⚠
D16	RL1N4003N02	DIODE	[M]
D17	1SS291TA	DIODE	[M]
D21, 22	RL1N4003N02	DIODE	[M]⚠
D23, 24	MTZJ9R1BTA	DIODE	[M]⚠
D26, 27	RL1N4003N02	DIODE	[M]⚠
D31, 32	RL1N4003N02	DIODE	[M]⚠
D33	MTZJ30BTA	DIODE	[M]⚠

Ref. No.	Part No.	Part Name & Description	Remarks
D41	MTZJ6R2CTA	DIODE	[M]⚠
D42	1SS254TA	DIODE	[M]
D43	1SS291TA	DIODE	[M]
D51, 52	1SS254TA	DIODE	[M]⚠
D53	MTZJ5R1BTA	DIODE	[M]⚠
D54	1SS254TA	DIODE	[M]
D461	MTZJ7R5CTA	DIODE	[M]
D511	RSQGP1S53V	DIODE	[M]
D521	LN66S	DIODE	[M]
D522	GL480V	DIODE	[M]
D523	BR3433S	L. E. D.	[M]
D531	GL480V	DIODE	[M]
D601, 602	MTZJ5R1BTA	DIODE	[M]
D620-629	LNJ801TPSJA	L. E. D.	[M]
D630	MTZJ3R0BTA	DIODE	[M]
D801, 802	1SS254TA	DIODE	[M]
		VARIABLE RESISTOR(S)	
VR501	EVMLGGA00B14	V. R	[M]
		COIL(S)	
L11, 12	SLQX400-D	COIL	[M]⚠
L701	RLBN102V-Y	COIL	[M]
		TRANSFORMER(S)	
PT11	RTP1K4C023-X	POWER TRANSFORMER	[M]⚠
		OSCILLATOR(S)	
X401	RSXY4M91M01T	OSCILLATOR	[M]
X601	RSXY4M91M01T	OSCILLATOR	[M]
X701	RSXB16M9J02T	OSCILLATOR	[M]
		DISPLAY TUBE(S)	
FL601	RSL0240-F	DISPLAY TUBE	[M]
		SWITCH(ES)	
S501	RSP1A017-A	SW	[M]
S502, 503	RSH1A005	SW	[M]
S601-614	EVQ21405R	SW	[M]
S615	RSH1A91ZA-A	SW	[M]
S616-637	EVQ21405R	SW	[M]

Ref. No.	Part No.	Part Name & Description	Remarks
S701	RSM0006-P	SW	[M]
		CONNECTOR(S) AND SOCKET(S)	
CN22	RJS1A6603	CONNECTOR(3P)	[M]
CN23	RJS1A6606	CONNECTOR(6P)	[M]
CN401	RJS1A6814-J	CONNECTOR(14P)	[M]
CN402	RJS2A3336M	CONNECTOR(36P)	[M]
CN404	RJS1A6603	CONNECTOR(3P)	[M]
CN501	RJS2A3332	CONNECTOR(36P)	[M]
CN502	RJS1A6223-1	CONNECTOR(23P)	[M]
CN503	RJT057W007-1	CONNECTOR(7P)	[M]
CN504	RJS7T4ZA	CONNECTOR(7P)	[M]
CN511	RJU057W007	SOCKET(7P)	[M]
CN521	RJS7T7ZA	CONNECTOR(7P)	[M]
CN531	SJT30344-H	CONNECTOR(3P)	[M]
CN601	RJS1A6714	CONNECTOR(14P)	[M]
CN602	SJS50882JQH	CONNECTOR(8P)	[M]
CN603	SJT30845JQ	CONNECTOR(8P)	[M]
CN604	RJT057W004-1	CONNECTOR(4P)	[M]
CN605	RJU057W004	SOCKET(4P)	[M]
CN606	RJT057W004-1	CONNECTOR(4P)	[M]
CN607	RJU057W004	SOCKET(4P)	[M]
CN701	RJU035T016-1	CONNECTOR(16P)	[M]
CN702	RJS1A6723-1Q	CONNECTOR(23P)	[M]
		FLAT CABLE(S)	
FC11	REZ0899	FLAT CABLE(3P)	[M]
FC12	REZ0898	FLAT CABLE(6P)	[M]
FC601	REZ0831	FLAT CABLE(3P)	[M]
		JACK(S)	
JK11	SJSD16-1	AC INLET	[M]⚠
JK801	RJH3201N	LINE OUT	[M]
		TEST JUMPER	
TJ701, 702	EYF8CU	TEST JUMPER	[M]

■ Resistors and Capacitors

Notes: * Capacity values are in microfarads (uF) unless specified otherwise, P=Pico-farads (pF) F=Farads (F)
* Resistance values are in ohms, unless specified otherwise, 1K=1,000 (OHM), 1M=1,000k (OHM)
* [M] indicates in Remarks columns parts that are supplied by MESA.

Ref. No.	Part No.	Values & Remarks
		RESISTORS
R11, 12	ERDS2FJ151	1/4W 150 [M]
R21, 22	ERDS2FJ102	1/4W 1K [M]
R31	ERDS2FJ822	1/4W 8.2K [M]
R32, 33	ERDS2FJ223	1/4W 22K [M]
R34, 35	ERDS2FJ681	1/4W 680 [M]
R41	ERDS2FJ471	1/4W 470 [M]
R42	ERDS2FJ8R2	1/4W 8.2 [M]
R51, 52	ERDS2FJ122	1/4W 1.2K [M]
R401	ERDS2FJ103	1/4W 10K [M]
R402	ERDS2FJ473	1/4W 47K [M]
R403-407	ERDS2FJ472	1/4W 4.7K [M]
R408, 409	ERDS2FJ103	1/4W 10K [M]
R410	ERDS2FJ104	1/4W 100K [M]
R411	ERDS2FJ181	1/4W 180 [M]
R412	ERDS2FJ472	1/4W 4.7K [M]
R413	ERDS2FJ181	1/4W 180 [M]
R417	ERDS2FJ103	1/4W 10K [M]
R420	ERDS2FJ472	1/4W 4.7K [M]
R421	ERDS2FJ103	1/4W 10K [M]
R461	ERDS2FJ271	1/4W 270 [M]
R462	ERDS2FJ331	1/4W 330 [M]
R463, 464	ERDS2FJ821	1/4W 820 [M]
R501, 502	ERDS2FJ103	1/4W 10K [M]
R503	ERDS2FJ102	1/4W 1K [M]
R601-608	ERDS2FJ472	1/4W 4.7K [M]
R610, 611	ERDS2FJ331	1/4W 330 [M]
R612-617	ERDS2FJ100	1/4W 10 [M]
R621	ERDS2FJ332	1/4W 3.3K [M]
R622	ERDS2FJ680	1/4W 68 [M]
R623, 624	ERDS2FJ100	1/4W 10 [M]
R631	ERDS2FJ103	1/4W 10K [M]
R632	ERDS2FJ102	1/4W 1K [M]
R651	ERDS2FJ103	1/4W 10K [M]
R652	ERDS2FJ471	1/4W 470 [M]
R653	ERDS2FJ103	1/4W 10K [M]
R701	ERJ6GEYJ4R7V	1/10W 4.7 [M]
R703	ERJ6GEYJ823	1/10W 82K [M]
R704	ERJ6GEYJ102A	1/10W 1K [M]
R705	ERJ6GEYJ103V	1/10W 10K [M]
R706	ERJ6GEYJ102A	1/10W 1K [M]
R707	ERJ6GEYJ474V	1/10W 470K [M]
R708	ERJ6GEYJ154V	1/10W 150K [M]
R709	ERJ6GEYJ683V	1/10W 68K [M]
R711	ERJ6GEYJ154V	1/10W 150K [M]
R712	ERJ6GEYJ221V	1/10W 220 [M]
R714	ERJ6GEYJ121V	1/10W 120 [M]
R717, 718	ERJ6GEYJ102A	1/10W 1K [M]
R720	ERJ6GEY0R00A	1/10W 0.00 [M]
R721	ERJ6GEYJ101V	1/10W 100 [M]
R722	ERJ6GEYJ563V	1/10W 56K [M]
R723	ERJ6GEYJ182V	1/10W 1.8K [M]
R724	ERJ6GEYJ333V	1/10W 33K [M]
R725	ERJ6GEYJ472V	1/10W 4.7K [M]
R726	ERJ6GEYJ473V	1/10W 47K [M]
R727	ERJ6GEYJ822V	1/10W 8.2K [M]
R728	ERJ6GEYJ103V	1/10W 10K [M]
R731	ERJ6GEYJ822V	1/10W 8.2K [M]
R735, 736	ERJ6GEYJ101V	1/10W 100 [M]
R744	ERJ6GEYJ103V	1/10W 10K [M]
R745	ERJ6GEYJ155V	1/10W 1.5M [M]
R748	ERJ6GEYJ182V	1/10W 1.8K [M]
R749	ERJ6GEYJ682V	1/10W 6.8K [M]
R750, 751	ERJ6GEYJ473V	1/10W 47K [M]
R752	ERJ8GEYJ220V	1/8W 22 [M]
R770, 771	ERJ6GEYJ155A	1/10W 1.5M [M]
R772	ERJ6GEYJ273A	1/10W 27K [M]
R803, 804	ERDS2FJ224	1/4W 220K [M]
R805, 806	ERDS2FJ822	1/4W 8.2K [M]
R807, 808	ERDS2FJ123	1/4W 12K [M]
R809-812	ERDS2FJ333	1/4W 33K [M]
R813-816	ERDS2FJ102	1/4W 1K [M]
R817, 818	ERDS2FJ473	1/4W 47K [M]
R819, 820	ERDS2FJ100	1/4W 10 [M]
R851	ERDS2FJ222	1/4W 2.2K [M]
		CHIP JUMPER(S)
J701-709	ERJ8GEY0R00A	1/8W 0 [M]
J714-717	ERJ8GEY0R00A	1/8W 0 [M]
J721-724	ERJ6GEY0R00A	1/10W 0 [M]
J726-731	ERJ6GEY0R00A	1/10W 0 [M]
		CAPACITORS
C11	ECBT1E103ZF	25V 0.01U [M]
C12	ECA1CM222EV	16V 2200U [M]⚠
C15	ECBT1H102KB5	50V 1000P [M]
C16	ECA1AM471B	10V 470U [M]
C17	ECEA0JKA101B	6.3V 100U [M]
C18	ECEA1HKA010B	50V 1U [M]
C20	ECBT1E103ZF	25V 0.01U [M]
C21, 22	RCA1VM101BT	35V 100P [M]⚠
C23, 24	ECA1EM471B	25V 470U [M]
C30	ECBT1E103ZF	25V 0.01U [M]
C31, 32	ECA1HM470B	50V 470U [M]
C33	ECBT1H102KB5	50V 1000P [M]
C41	ECBT1H102KB5	50V 1000P [M]
C42	ECEA0JKA101B	6.3V 100U [M]
C43	ECA0JM102B	6.3V 1000U [M]
C44	ECEA1HKA010B	50V 1U [M]
C401	ECBT1C103NS5	16V 0.01U [M]
C402	ECEA0JKA101B	6.3V 100U [M]
C403, 404	ECBT1H221KB5	50V 220P [M]
C405	ECBT1C103NS5	16V 0.01U [M]
C406	ECBT1H102KB5	50V 1000P [M]
C407-412	ECBT1C103NS5	16V 0.01U [M]
C461	ECEA1AKA470B	10V 47U [M]
C601	ECBT1C103NS5	16V 0.01U [M]
C602	ECBT1H102KB5	50V 1000P [M]
C603	ECBT1C103NS5	16V 0.01U [M]
C604	ECBT1H391KB5	50V 390P [M]
C605	ECFR1E104ZF5	25V 0.1U [M]
C606	ECEA0JKA101B	6.3V 100U [M]
C651	ECEA1HKA010B	50V 1U [M]
C652	ECEA1EKA4R7B	25V 4.7U [M]
C701	ECEA0JKA330I	6.3V 33U [M]
C702	ECUZNE104MBN	25V 0.1U [M]
C703	ECEA0JKA101I	6.3V 100U [M]
C704, 705	ECUZNE104MBN	25V 0.1U [M]
C706	ECUV1H272KBN	50V 2700P [M]
C707	ECUV1E273KBN	H 25V 0.027U [M]
C708	ECUE1H472KBN	H 50V 4700P [M]
C709	ECUE1C473KBN	H 16V 0.047U [M]
C710	ECUV1H182KBN	H 50V 1800P [M]
C711, 712	ECUWNE104ZFN	H 25V 0.1U [M]
C713	ECUV1C104MBM	16V 0.1U [M]
C714	ECEA0JKA101I	6.3V 100U [M]
C716	ECUE1H561KBN	50V 560P [M]
C717	ECUWNE104ZFN	25V 0.1U [M]
C718	ECUV1C224KBM	16V 0.22U [M]
C721, 722	ECUV1H100DCN	H 50V 10P [M]
C723	ECEA1AKA221I	10V 220U [M]
C724	ECUV1C104MBM	16V 0.1U [M]
C725, 726	ECUE1H102KBN	50V 1000P [M]
C727, 728	ECEA1HPK010I	50V 1U [M]
C730	ECUWNE104ZFN	25V 0.1U [M]
C731, 732	ECEA0JKA221I	6.3V 220U [M]
C733	ECUZNE104MBN	25V 0.1U [M]
C734	ECEA1AKA221I	10V 220U [M]
C735-737	ECUWNE104ZFN	25V 0.1U [M]
C738	ECUV1C154KBN	H 16V 0.15U [M]
C742	ECUV1E273KBN	H 25V 0.027U [M]
C743	ECUWNE104ZFN	H 25V 0.1U [M]
C744	ECUE1E822KBN	H 25V 8200P [M]

Ref. No.	Part No.	Values & Remarks
C745	ECUE1H102KBN	H 50V 1000P [M]
C747	ECUE1H222KBN	H 50V 2200P [M]
C748	ECUV1H471KBM	H 50V 470P [M]
C749	ECUZNE104MBN	H 25V 0.1U [M]
C750	ECUV1C104MBM	16V 0.1U [M]
C751	ECUZNE104MBN	H 25V 0.1U [M]
C752	ECUE1H152KBN	H 50V 1500P [M]
C753	ECUV1H471KBM	H 50V 470P [M]
C754	ECUE1H471KBN	H 50V 470P [M]
C801, 802	ECEA1AKA470B	10V 47U [M]
C805-808	ECCR1H391J5	50V 390P [M]
C809, 810	ECEA0JKA470B	6.3V 47U [M]
C811, 812	ECBT1H102KB5	50V 1000P [M]

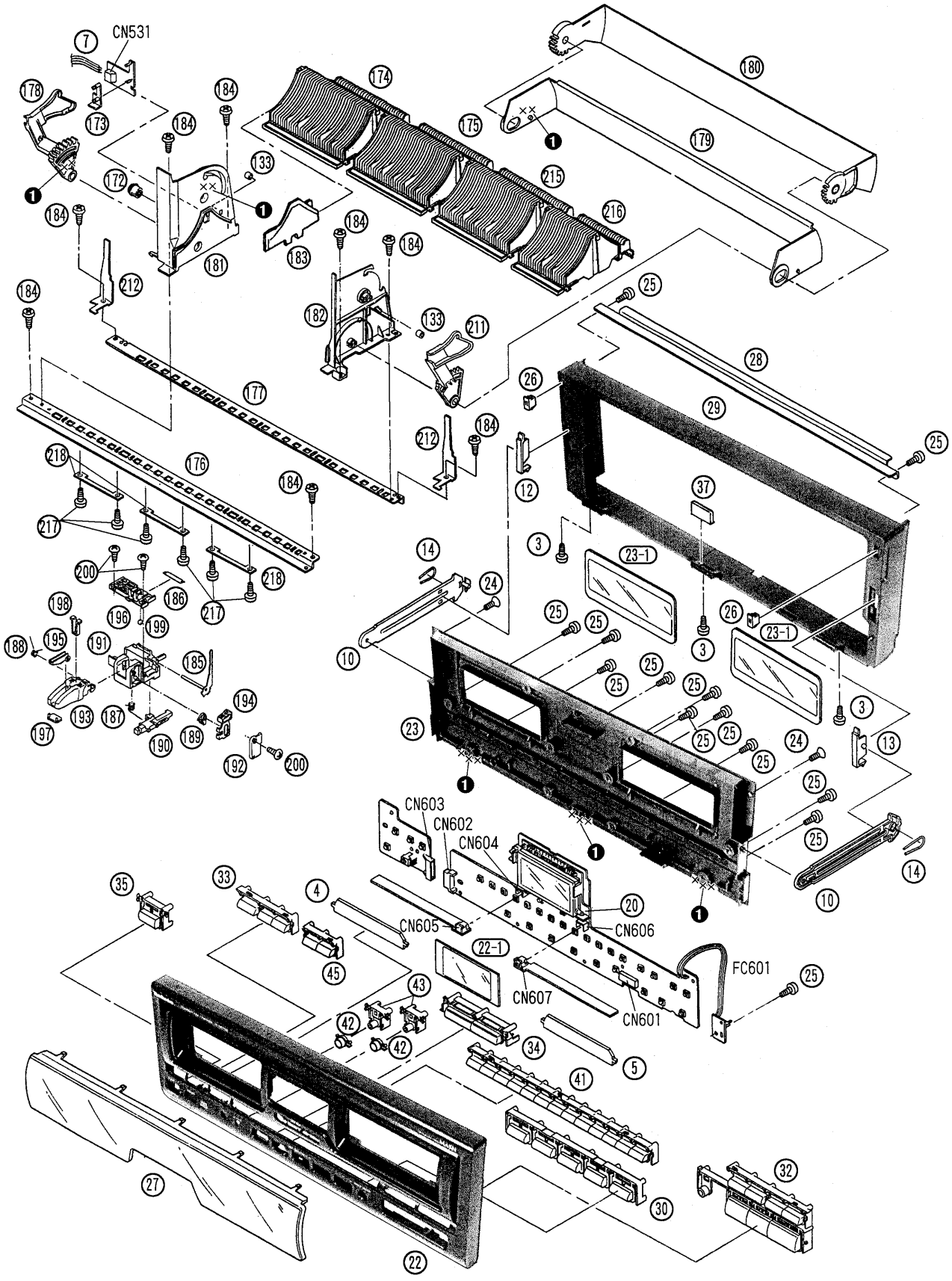
■ Replacement Parts List

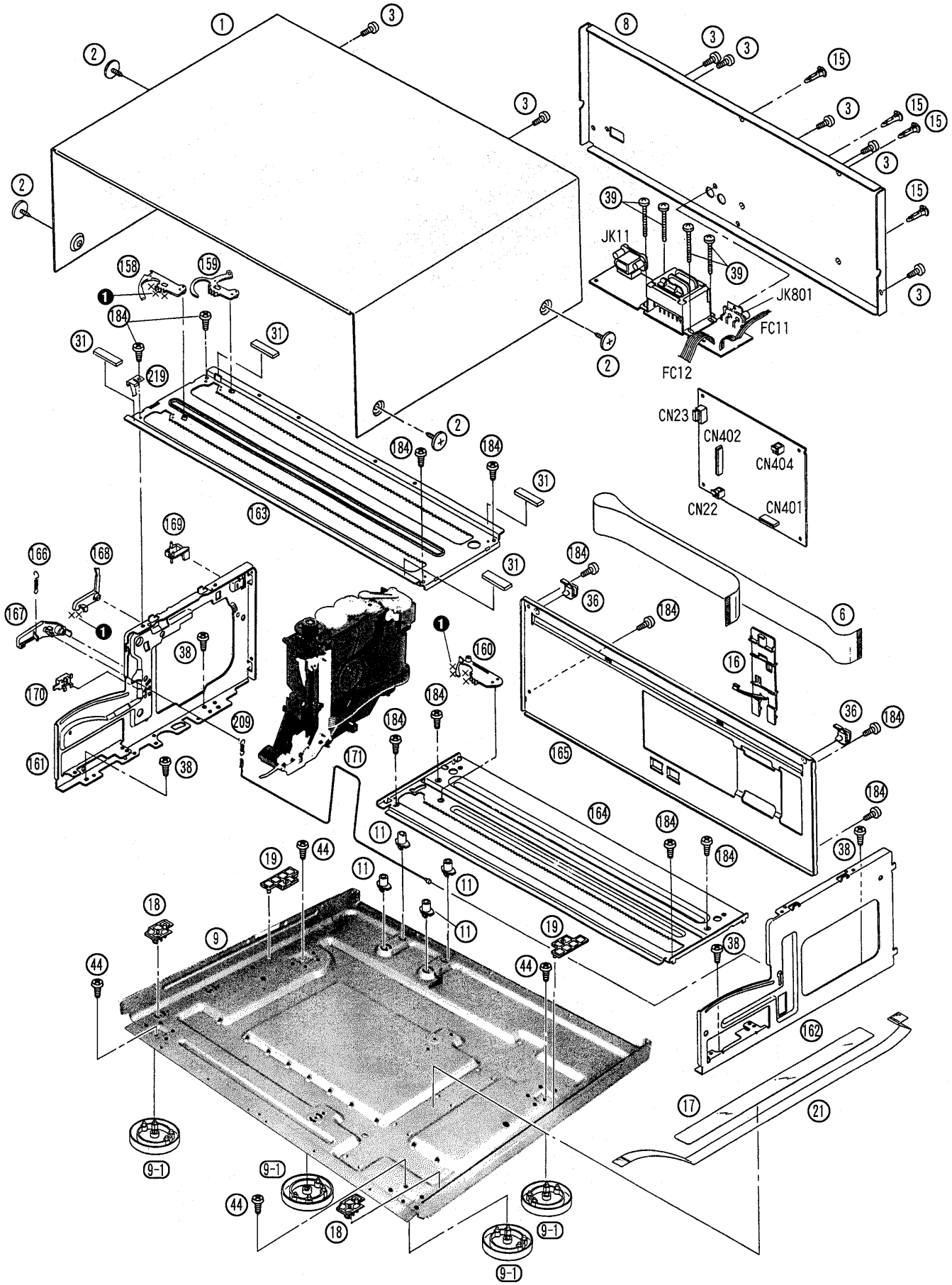
Notes: * The parenthesized indications in the Remarks columns specify the areas. (Refer to the cover page for area.)Parts without these indications can be used for all areas.
* [M] indicates in Remarks columns parts that are supplied by MESA.

Ref. No.	Part No.	Part Name & Description	Remarks
		CABINET AND CHASSIS	
1	RKM0336-K	CABINET	[M]
2	SNE2129-1	SCREW	[M]
3	XTBS3+8JFZ1	SCREW	[M]
4	RGL0310-Q	DISC INDICATOR(L)	[M]
5	RGL0325-Q	DISC INDICATOR(R)	[M]
6	REZ0988	FLAT CABLE(36P)	[M]
7	REZ0928	FLAT CABLE(3P)	[M]
8	RGR0247A-GA	REAR PANEL	[M] (P)
8	RGR0247A-HA	REAR PANEL	[M] (PC)
9	RFKJLM410PK	BOTTOM CHASSIS ASS'Y	[M]
9-1	RKA0053-A	FOOT	[M]
10	RKJ0016	SIDE STAY	[M]
11	RKQ0089	PCB HOLDER	[M]
12	RKQ0193-K	SIDE GRIL(L)	[M]
13	RKQ0194-K	SIDE GRIL(R)	[M]
14	RME0209	STAY SPRING	[M]
15	RMN0341	PCB HOLDER	[M]
16	RMR0950-K	FFC HOLDER	[M]
17	RMR0961-Q	FFC COVER	[M]
18	RMX0115	MECHA SPACER A	[M]
19	RMX0116	MECHA SPACER B	[M]
20	RMN0443	FL HOLDER	[M]
21	REZ0830	14P FFC	[M]

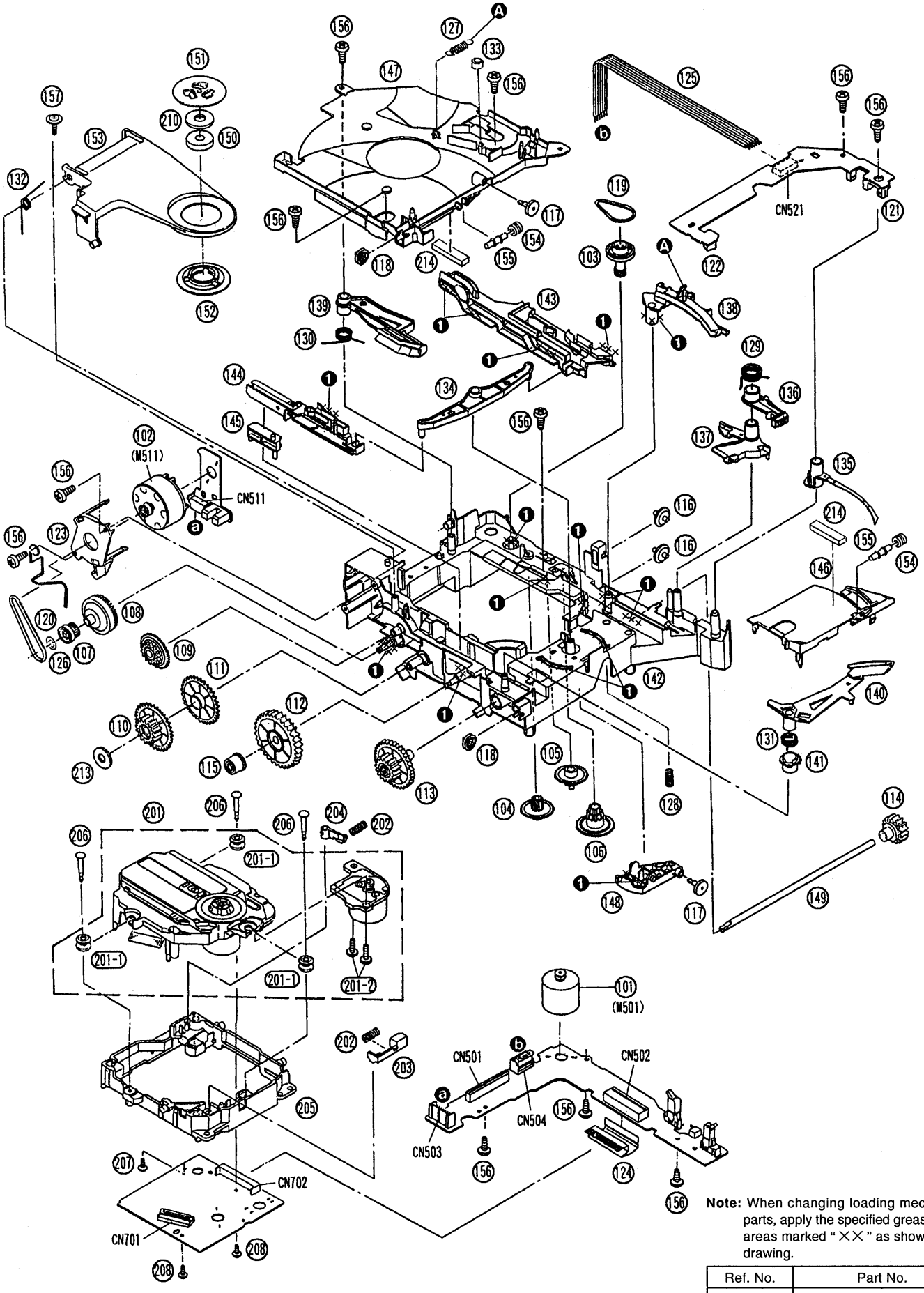
Ref. No.	Part No.	Part Name & Description	Remarks
22	RFKGLM410PK	FRONT PANEL ASS'Y	[M]
22-1	RGK0778-Q	FL ORNAMENT PLATE	[M]
23	RFKHLM410PK	BACK PANEL ASS'Y	[M]
23-1	RGK0777-Q1	REAR ORNAMENT PLATE	[M]
24	RHD26023-K	SCREW	[M]
25	RHD26028-T	SCREW	[M]
26	RKG0009	MAGNET CATCH	[M]
27	RKW0425-Q	FRONT ORNAMENT PLATE	[M]
28	RMA0998	MECHA ANGLE	[M]
29	RGP0515A-K	GRILLE	[M]
30	RGU1323-K	GROUPING BUTTON	[M]
31	RMG0429-K	CUSHION RUBBER	[M]
32	RGU1319-K1	MAIN BUTTON	[M]
33	RGU1320-K1	PROGRAM BUTTON	[M]
34	RGU1321-K1	DISC SKIP BUTTON	[M]
35	RGU1322-K1	POWER BUTTON	[M]
36	SHRD163	CORD HOLDER	[M]
37	RMQ0673	GRILL SHEET	[M]
38	XTB3+10FFZ	SCREW	[M]
39	XTB3+20JFZ	SCREW	[M]
40	REZ0945	4-PIN WIRE	[M]
41	RGU1324-K	10KEY BUTTON	[M]
42	RGK0534-N	BUTTON ORNAMENT	[M]
43	RGU1325-K1	ID SCAN BUTTON	[M]
44	XTB3+6J	SCREW	[M]
45	RGU1327A-K	TEXT BUTTON	[M]

■ Cabinet Parts Location




JK11
JK801
FC11
FC12
CN23
CN402
CN404
CN22
CN401

■ Loading Mechanism Parts



Note: When changing loading mechanism parts, apply the specified grease to the areas marked "××" as shown in the drawing.

Ref. No.	Part No.
❶	RFKXPG671

■ Replacement Parts List

Notes: * Important safety notice:
Components identified by ⚠ mark have special characteristics important for safety.
Furthermore, special parts which have purposes of fire-retardant (resistors), high-quality sound (capacitors), low-noise (resistors), etc. are used.
When replacing any of components, be sure to use only manufacturer's specified parts shown in the parts list.
* The parenthesized indications in the Remarks columns specify the areas. (Refer to the cover page for area.)
Parts without these indications can be used for all areas.
* Warning: This product uses a laser diode. Refer to caution statements on page 2.
* [M] indicates in Remarks columns parts that are supplied by MESA.

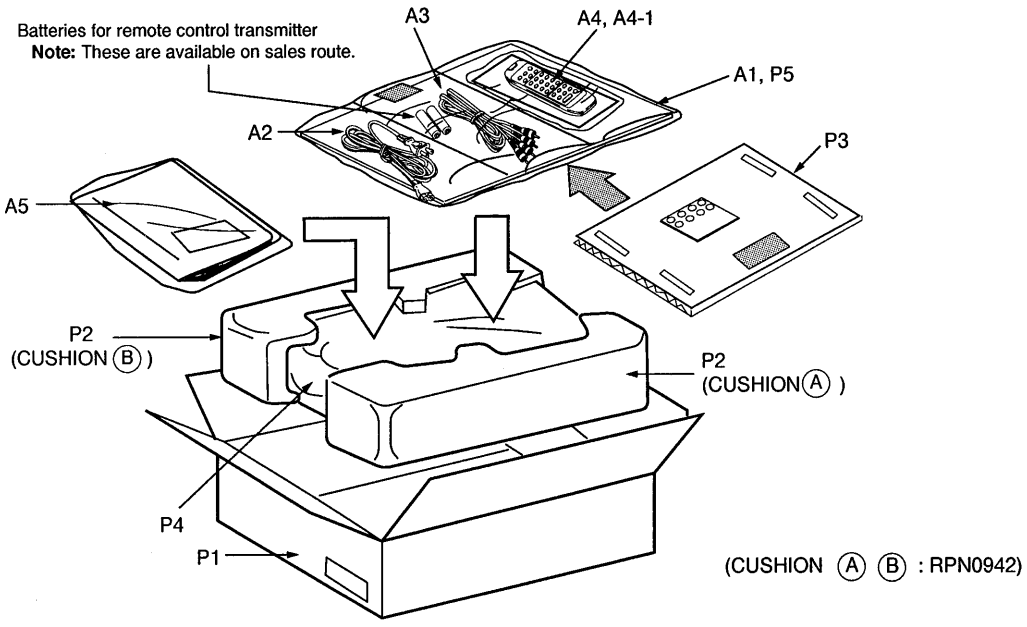
Ref. No.	Part No.	Part Name & Description	Remarks
		LOADING MECHANISM	
101	RFKPLMC50PAK	LOADING MOTOR(M501) ASS'Y	[M]
102	RFKNLMC50PBK	SLIDE MOTOR(M511) ASS'Y	[M]
103	RDG0336	PULLEY GEAR	[M]
104	RDG0337	REDUCTION GEAR(A)	[M]
105	RDG0338	REDUCTION GEAR(B)	[M]
106	RDG0339	DRIVE GEAR	[M]
107	RDG0340	SLIDE PULLEY GEAR	[M]
108	RDG0341	COUNT RING	[M]
109	RDG0342	SLIDE REDUCTION GEAR	[M]
110	RDG0343	REAR SLIDE GEAR	[M]
111	RDG0344	SLIDE GEAR(A)	[M]
112	RDG0345	SLIDE GEAR(B)	[M]
113	RDG0346	FRONT SLIDE GEAR	[M]
114	RDG0347	LOWER SLIDE GEAR	[M]
115	RDP0080	UPPER ROLLER	[M]
116	RDP0081	LOWER ROLLER	[M]
117	RDP0082	ROPE ROLLER(A)	[M]
118	RDP0083	ROPE ROLLER(B)	[M]
119	RDV0041	LOADING BELT	[M]
120	RDV0046	SLIDE BELT	[M]
121	RMN0399	SENSOR HOLDER	[M]
122	RMN0358	LED HOLDER	[M]
123	RMN0356	MOTOR HOLDER	[M]
124	REZ0829	FFC(23P)	[M]
125	REZ0832	FLAT CABLE(7P)	[M]
126	RHW21009	WASHER	[M]
127	RMB0453	FEED LEVER SPRING	[M]
128	RMB0483	LOCK CANCELLATION SPRING	[M]
129	RME0194	SUB LEVER SPRING	[M]
130	RME0195	SIZE LEVER SPRING	[M]
131	RME0196	RETURN LEVER SPRING	[M]
132	RME0197	CLAMP SPRING	[M]
133	RMG0200	CUSHION RUBBER	[M]
133	RMG0200	CUSHION RUBBER	[M]
134	RML0411	CONNECTION LEVER	[M]
135	RML0412	FRONT FEED LEVER	[M]
136	RML0413	FEED SUB LEVER	[M]
137	RML0414	GUIDE LEVER	[M]
138	RML0415	REAR FEED LEVER	[M]
139	RML0416	SIZE DETECTION LEVER	[M]
140	RML0417	RETURN LEVER(A)	[M]
141	RML0418	RETURN LEVER(B)	[M]

Ref. No.	Part No.	Part Name & Description	Remarks
142	RFKNLMC50PBK	MECHANISM BASE ASS'Y	[M]
143	RMR0921-K	LOWER SLIDE PLATE	[M]
144	RMR0922-K	UPPER SLIDE PLATE	[M]
145	RMR0923-W	SLIDE SUPPORT PLATE	[M]
146	RMR0924-K	DISC GUIDE(L)	[M]
147	RMR0925-K	DISC GUIDE(R)	[M]
148	RMR0927-K	ROLLER BASE	[M]
149	RMS0519	CONNECTION SHAFT	[M]
150	RHM245ZA	MAGNET	[M]
151	RMR0334	FIXED PLATE	[M]
152	RMR0761-W	CLAMPER	[M]
153	RFKNLMC400EK	CLAMP PLATE	[M]
154	RDP0091	DISC ROLLER	[M]
155	RDP0092	GUIDE ROLLER	[M]
156	XTBS26+10J	SCREW	[M]
157	XTWS3+10Q	SCREW	[M]
158	RDG0333	FRONT LOCK GEAR	[M]
159	RDG0334	REAR LOCK GEAR	[M]
160	RDG0374	LOWER LOCK GEAR	[M]
161	RMA0904	SLIDE PLATE(L)	[M]
162	RMA0905	SLIDE PLATE(R)	[M]
163	RMA0914	UPPER RAIL	[M]
164	RMA0915	LOWER RAIL	[M]
165	RMA0916	REAR SUPPORT PLATE	[M]
166	RMB0469	LOCK ARM SPRING	[M]
167	RML0421	STAY LOCK ARM	[M]
168	RML0436	FRONT LOCK PLATE	[M]
169	RML0437	REAR LOCK PLATE	[M]
170	RMR0959-K	ROPE GUIDE	[M]
171	RMW0010	GUIDE ROPE	[M]
172	RDG0183	DAMPER GEAR	[M]
173	RMN0388	SINGLE SENSOR HOLDER	[M]
174	RFKNLMC50PCK	DISC STOKER(A)	[M]
175	RFKNLMC50PDK	DISC STOKER(B)	[M]
176	RMA0912	FRONT STOCKER STAND	[M]
177	RMA0913	REAR STOCKER STAND	[M]
178	RML0419	SHUTTER LEVER(L)	[M]
179	RMR0935-K	SHUTTER INSIDE	[M]
180	RMR0936-K	SHUTTER OUTSIDE	[M]
181	RMR0932-K	SHUTTER SUPPORT(L)	[M]
182	RMR0947-K	SHUTTER SUPPORT(R)	[M]
183	RMR0948-H	STOCKER PARTITION PLATE	[M]
184	XTB3+6F	SCREW	[M]
185	RFKNLMC50PEK	EJECT PUSH LEVER ASS'Y	[M]
186	RMC0291	EJECT CLICK SPRING	[M]

Ref. No.	Part No.	Part Name & Description	Remarks
187	RMEO203	EJECT SLIDE SPRING	[M]
188	RMEO204	EJECT LEVER SPRING	[M]
189	RMLO438	EJECT MIDDLE LEVER	[M]
190	RMLO439	EJECT SLIDE PLATE	[M]
191	RMRO938-K	EJECT BASE	[M]
192	RMRO939-K	EJECT COVER	[M]
193	RMRO940-K	EJECT LEVER	[M]
194	RMRO941-H	EJECT BUTTON	[M]
195	RMRO943-H	EJECT HOLD LEVER	[M]
196	RMRO958-K	EJECT GUIDE	[M]
197	RMRO964-K	EJECT PAD(A)	[M]
198	RMRO965-K	EJECT PAD(B)	[M]
199	SFYB5-32	STEEL BALL	[M]
200	XTN2+6JFZ	SCREW	[M]
201	RAE0150Z	TRAVERSE DECK ASS'Y	[M]
201-1	SHGD113-1	FLOATING RUBBER	[M]
201-2	SNSD38	SCREW	[M]
202	RMBO455	FRONT SUPPORT SPRING	[M]
203	RMLO423	FRONT SUPPORT ARM	[M]
204	RMLO424-1	REAR SUPPORT ARM	[M]
205	RMRO937-K	TRAVERSE CHASSIS	[M]
206	RMSO123-1	TRAVERSE FIXED PIN	[M]
207	XTN2+6G	SCREW	[M]
208	XTV2+6G	SCREW	[M]
209	RMBO454	GUARD ROPE SPRING	[M]
210	RMAO989	BACK YOKE	[M]
211	RMLO420	SHUTTER LEVER(R)	[M]

Ref. No.	Part No.	Part Name & Description	Remarks
212	RMA1006	SHUTTER LEVER PLATE	[M]
213	RHW42002	WASHER	[M]
214	RMFO237-1	GUIDE FELT	[M]
215	RFKNLMC400PA	DISC STOCKER(C)	[M]
216	RFKNLMC400PB	DISC STOCKER(D)	[M]
217	RHD20047-K	SCREW	[M]
218	RMAO995	STOPPER	[M]
219	RMCO316	SPRING PLATE	[M]
		PACKING MATERIAL	
P1	RPG3376	PACKING CASE	[M]
P2	RPNO942	POLYFOAM	[M]
P3	RPQO164	ACCESSORY PAD	[M]
P4	RPFXO012	MIRAMAT BAG	[M]
P5	RPFO139	BAG	[M]
P6	SPB1061		[M]
		ACCESSORIES	
A1	RFKSLMC310PK	INSTRUCTION MANUAL ASS'Y	[M]
A2	SJA172	AC CODE	[M]
A3	RJL2P004B08	STEREO CONNECTION CABLE	[M]
A4	EUR644972	REMOTE CONTROL	[M]
A4-1	UR64EC1371	BATTERY COVER	[M]
A5	RFAO623-K1	FILE BOOK	[M]

■ Packaging



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